

AMERICAN NURSERYMAN

The Nurseryman's Forte: To Make America More Beautiful and Fruitful

NOVEMBER 15, 1949

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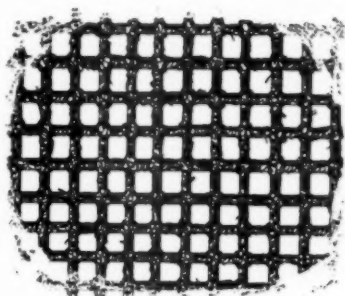
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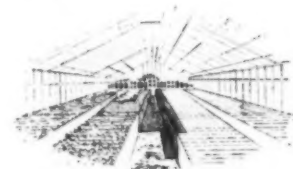


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AMERICAN NURSERYMAN

F. R. KILNER, *Editor and Publisher*

Joan L. Kilner, *Assistant Editor*

Editorial

CLIMATE CONTROL.

Control of climatic conditions on the home grounds and within the home will furnish retail nurserymen much sales ammunition, if use is made of current releases by the public information service of the American Association of Nurserymen.

Planned planting of trees and shrubs may control temperature on a good-size lot by as much as 10 to 15 degrees, according to a current release, which points out that the home can be made cooler in summer and warmer in winter while the homeowner at the same time saves on his fuel bills.

Statistics relating to the possible control of climate by planting are derived from a survey made by House Beautiful magazine with the help of several scientists, some of the results of which were published in its October issue.

Some of the procedures are well known and have been long advocated. These are the use of trees and shrubs as windbreaks, the planting of trees close to the house to keep the roof cool in summer and the placing of hedges to keep out the dust and heat of paved roads and sidewalks.

The case for the windbreak is substantiated by a statement that in heating an ordinary house twice as much fuel is required when the outdoor temperature is 32 degrees and a wind of twelve miles per hour is blowing than is required at the same temperature when the wind is blowing three miles per hour. In the heat of summer, if the foliage of trees shades the house roof and west wall, the temperature may be reduced as much as 20 to 40 degrees, it is asserted. And if deciduous trees are used for such summer shade, the house will get the full benefits of the sun when the leaves are gone in winter. The outdoor living room may bring coolness, for it is stated that on a relatively cool afternoon in August the temperature may be only 77 degrees at a height of six feet in the shade while it is 95 degrees on a concrete walk in the sun, 110 degrees on a roof and 88 degrees on short grass in the sun.

Some other suggestions for temperature control are offered, such as protection from early frost by guid-

ing the cold air away from gardens by means of hedges. The use of deciduous vines on trellises over windows is suggested to keep the hot sun out of the house in summer and yet allow it to shine inside in the winter. If grass is grown between squares of concrete, flagstone or brick, cooler walks and terraces in summer will be the result.

By proper planning, home grounds can be planted in such a way that parts of them will be protected from the hot sun in summer and yet receive the full strength of the sun in winter. The sun rises in the northeast in summer and in the southeast in winter; plantings may be made to take advantage of this change according to season with comfort to the householder.

Publicity on this subject should be of benefit to nurserymen at a time when home building is on the increase. While too few home grounds are laid out to take advantage of the findings of scientists, some of the measures advocated will be practical. The fact that there is an economic value in planting trees and shrubs may induce owners of new homes to spend more on such plantings than seems to be the average case at present.

LAW AND NOT EDICTS.

While the action of Congress in raising the minimum wage to 75 cents per hour may not have the easy acceptance in all parts of the country that the administration anticipated, business will be relieved by the fact that the new law strives to end the bureaucratic practice at Washington of adding to the coverage of the act by new interpretations. The fair labor standards act as passed in 1938 applied to workers in jobs "necessary" to production for interstate commerce. By bureaucratic edicts the word necessary was extended in its application until it came to include the men who mowed the lawns that surrounded factories producing for interstate commerce, as well as the window washers that cleaned the factory panes.

The new law provides that coverage is extended only to those workers in jobs "directly essential" to production for interstate commerce. While it may be some time before the interpretation is clear, the intent of Congress is to make accurate definitions and remove, as far as possible,

the tendency of administrative bureaus to lawmaking by edict, instead of by Congress itself.

Another clarification is the rule that the coverage of retail establishments is confined to those doing fifty per cent or more of their trade out of state. This provision will end much uncertainty arising from bureau rulings.

Further relief for the businessman is in the provision that government suits for back wages shall be confined solely to settled points of law and to specific amounts allegedly owed, without damages. Back wage recovery actions are limited to two years. To a moderate extent, at least, these provisions will take the government out of business interference, and substitute law made by Congress for edicts made by bureaus.

OAK WILT.

Articles on the oak wilt disease which have appeared in this magazine in the past few years gave nurserymen knowledge of this new enemy of trees, then largely restricted in its effects. Each successive year, however, has seen the ravages of oak wilt spread farther and become more virulent in the areas where it had existed previously. Its appearance in the forest preserves of Cook county, adjacent to the city of Chicago, caused alarm for the oak woods which were among the most valuable parts of these preserves. Noel B. Wyson, forester for the Cook county preserves, consequently made a trip through the adjacent areas of Illinois and those in Wisconsin and Iowa where the disease had been noted. In the article in this issue he not only presents detailed information on the disease, by which nurserymen can learn to recognize it, but he reports its ravages and the threat imposed by its possible spread.

Already the proportions of the oak wilt disease have caused requests to be made to the federal authorities for research which might discover means of control. Nurserymen are being asked, through their organizations, to support that request. Hence the article in this issue is enlightening, not only as to the facts known regarding the disease itself, but also as to its importance as a threat to the oaks that are among the irreplaceable beauties of our streets, parks and countryside.

Magnolias from Stem Cuttings

By James S. Wells

The production of certain varieties of magnolias from softwood cuttings is now a practical and accepted method of propagation. The term "successful" is relative, and, to support this assertion, we should say that we have propagated slightly more than 20,000 magnolias of the

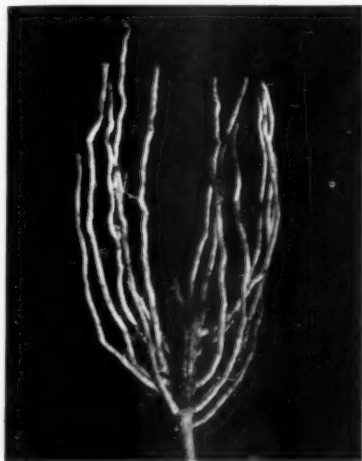


Illustration 1 — Cutting of *Magnolia soulangeana* showing the scar tissue covering the heavy wound, and the strong rooting which followed this treatment.

species *soulangeana*, *soulangeana nigra*, *stellata*, *stellata rosea* and *lennei*, entirely from cuttings this year. To achieve this, we have had to experiment through the past three years, trying various methods, discarding some and altering others, until we believe that we have established a fairly successful procedure.

Cuttings are taken any time from early July until late August, or even early September. It is not possible to give the accurate date when cuttings will first be in a fit condition to take, for it is here that the judgment of the propagator has to be exercised. To give some indication of the condition which we consider to be best for cuttings, we have found that relatively short shoots which are hardening up and commencing to form flower buds at the tip are in just the right condition for taking as cuttings. The wood will be firm, and active growth at the tip of the shoot will have ceased. When taking these flowering shoots, we normally remove the flower bud as the cutting is made. Although this is the best type of cutting, all types of growth can be used for cutting wood.

Strong, vigorous shoots sent out by the plant from lower down can be used, these being cut into short sections containing three nodes. The bottom leaf is removed, and the two upper leaves remain. When using this type of shoot for cuttings, the soft tip, which still may be in active growth until September, is of no value and should be removed. The wood, no matter what type of cutting is taken, has to be firm, but not really hard. Only by experiment and practice in gauging the right condition of the shoots for cutting can one come to know just when to start. He should remember, however, that if cuttings are made from really soft material, successful rooting is extremely improbable. On cuttings made from vigorous-growing trees, the leaves which remain may be much too large for practical purposes. If this is the case, these leaves can be reduced to half their normal size without injury and without materially affecting the rooting of the cutting.

We now come to wounding the base of the cutting, one of the most important operations. It can be done in two ways. On firm wood we usually use the heavy wound, which is clearly shown in illustration 1. This is made by removing, with a sharp knife, a very thin slice of the outer tissue from the base of the cutting, exposing the cambium tissue which lies beneath. The second type of wound is made by drawing the tip of a sharp knife blade down the stem of the cutting, at its base, to cut through the outer tissues without cutting deeply into the center woody tissues (2). With this last method no portion of the cutting is removed.

After wounding, we dip the cuttings into hormone powders. We have found a mixture containing eight milligrams to the gram of indolebutyric acid to be most satisfactory. With this treatment, however, the skill and judgment of the propagator will again be needed, for if the cuttings are soft, he may wish to use the No. 2 powder containing four milligrams to the gram. Cuttings are then inserted, in the normal manner, in a bench with bottom heat of 65 to 70 degrees, filled with a 60-40 mixture of sand and peat. Gentle daily spraying, to keep the leaves fresh and the cuttings turgid, is all that is required, and in six to eight weeks the

majority should be strongly rooted (3 on the next page).

Constant vigilance is necessary at this time to discover any indication of the cuttings' dropping their leaves, a condition which may be brought about by any number of different causes. The wood may be too hard, the greenhouses may be too cool, or the cuttings may have received an additional shock in some way. Once defoliated, the cuttings are useless, and it is important, therefore, that every effort should be made by the propagator to retain as many leaves as possible on the cuttings. Occasionally mildew attacks the leaves in the bench, and we have found that spraying with normal strength Semesan completely controls this. It is an excellent idea to spray the cuttings, as a preventive measure, after they have been in the bench for two or three days.

Once the cuttings are rooted, they are carefully lifted from the bench and then potted. Any which are only beginning to root are set back into the bench, if the leaves are still attached, for they will take root if given two weeks more. Great care



Illustration 2—Details of Light Wound.

is necessary when potting, for the roots are tender and brittle. We use a normal potting compost containing top spit soil, peat, sand and a light dusting of superphosphate. The compost should be only slightly moist so that it runs freely between the roots of the cutting during potting. It is essential that the stem should not be pressed down into the pots during



Illustration 3—Successfully Rooted Cuttings of *Magnolia Soulangiana*.

this operation, for in this way the young, tender tips of the new roots are broken off, and this injury can cause them to die back, killing the whole plant. Hold the cutting in the pot, gently trickle the soil around the roots and tap the pot on the bench to work the soil between the roots of the plant. A light firming at the top is all that is necessary to complete the operation. The potted plants are returned immediately and are placed on the bench in exactly the same conditions under which they were rooted. The pots are well watered and the houses kept close and warm. This is a most important part of the sequence of operations, for upon the vigorous rooting of the cutting in the pot depends the ability of the plants to come successfully through the hard winter months. This question of overwintering is one which has stopped many growers from attempting propagation of magnolias and other plants from cuttings. We have overcome the problem with magnolias. We have found, however, that it is essential that the cuttings become established in the pots and at least make the first movement toward top growth. This may be merely a swelling of the terminal buds at the apex of the cutting. If this swelling and plumping up of the buds can be seen, and if the cutting has a well established root system in the pot, you can confidently expect it to come through the winter (3B). On the other hand, if the buds at the top of the cutting remain the same size and in the same condition they were in when the cutting was first taken from the parent plant, then,

usually, that cutting will die. We try to get the plants to break the terminal buds and to have one to three inches of new growth before they begin to harden off and drop their leaves in the late fall. With late batches of cuttings, however, it is not always possible to break the plants into new growth, and one has to be content with the first signs of this, as shown by the swelling of the terminal buds.

As the first batches are potted and returned to the greenhouse, they make vigorous roots in the pots, and,

in three to four weeks, the new top growth will be seen. This is the time when we remove the plants from the greenhouse and place them in deep frames. The pots are plunged in a bed of peat and are covered completely by at least one-half inch of peat. The frames are covered with lath shades to give all the light and air possible, and the cuttings are encouraged to continue growing, yet hardening up at the same time. As the fall weather cools, the plants will stop growing, and finally they will shed their leaves in the normal manner. The beds are then lightly cleaned up to remove most of the leaves and any weeds which may have grown, and then they are covered with sash for the winter. No further protection is given except reed mats in the coldest weather. In the winter of 1947 to 1948, which was much colder than that of 1948 to 1949, the cuttings and the pot balls froze solid for nearly six weeks. During this time we kept the frames covered with the reed mats, which were not removed until the frames had slowly thawed after the weather broke. We consider this slow thawing after freezing to be most important to the successful overwintering of young stock of this type.

As soon as the ground was in a satisfactory condition in the spring, beds were prepared with a generous dressing of manure and rototilled, and the plants were brought out of the frames and lined out nine inches

[Continued on page 65.]

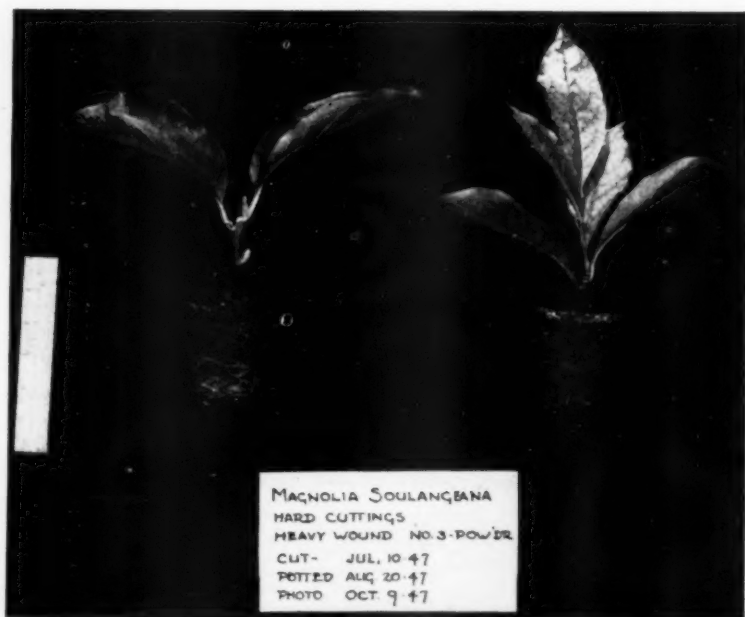


Illustration 3B—Plumping up of terminal buds on plant at left and new growth on the plant at the right.

Texture in Foundation Plantings

By Clarence E. Lewis

Most jobs are mediocre when completed unless they show the results of thorough planning. They can be made better by employing that "extra something," which, in landscape planning, is the judicious use of texture. This is the added touch which makes the difference between an ordinary planting and a well finished one.

The larger the leaf, the coarser the texture, and, inversely, the smaller the leaf, the finer the texture. *Rhododendron catawbiense*, *Kalmia latifolia*, and *Azalea* (*Rhododendron*) *amoena* are examples of coarse, medium and fine texture, respectively. It is best to think of plants as belonging to one of these three classes.

Scale relationship can be seriously affected by the use or misuse of texture in foundation and other plantings. The larger the area, the house or the size of stone in the house, the more adaptable are large-leaved plants. A large home, for instance, can accept more large-leaved rhododendrons in a foundation planting than a small home. By the same token, a large home of coarse stone is more adaptable to coarse-leaved plants than one of finer material, such as thin stone or brick.

Texture becomes increasingly important as the size of the house, visible structural material in the house and the area become smaller. The smaller the home, the more important it is that large-leaved plants be placed properly. Since the owners of small homes request such plants as *Rhododendron catawbiense* for their foundation plantings, these plants should be used at the outer corners, with medium-textured plants in the connecting areas (between corners and doorway plantings). Coarser-leaved plants carry more pictorial weight, for which reason they confine attention to the area between them, or provide psychological outer boundaries when used on the corners (see illustration A). This is desirable, since the main focal point is the doorway. It is better to adapt principally medium and fine-textured plants to most small houses or areas. This is more important if the house is of brick, thin stone or narrow clapboards.

It is usually better not to plant a coarse-textured plant beside a fine-textured one (see illustration B on page 10). This would provide too much contrast and too much interest. However, this effect is sometimes desirable in border plantings where emphasis is needed. Grading from coarse to medium texture, and from medium to fine, provides better harmony and blending for most plantings, foundation type or otherwise.

Texture casts its influence on balance. One coarse-textured plant, such as *Rhododendron maximum*, may be balanced with three medium-textured plants of *Kalmia latifolia*, or a large mountain laurel may be balanced with an *enkiathus* and a group of small-leaved azaleas. Because three plants are planned for one corner of the house, it is not necessary that the opposite corner should also have three plants. Our minds function too much this way. A more interesting planting is achieved by having the outer corners planned with different species of varied size and form. By using differently textured plants at the corners, it is easier to balance three against one. The same practice can be followed in plantings elsewhere than around the foundation. It is a question of weight and mass, because it takes a mass of medium-textured foliage to balance one coarse-leaved plant. In fact, it amounts to a comparison of leaf surfaces, where you provide extra plants on one side in

order to approximate the same amount of leaf surface as that of the plant on the other side.

I do not wish to imply that we should study each plant as to the exact size of its leaf before fitting it into a planting, but we should think of it as belonging to one of the three classes—coarse, medium or fine. It is hard, in some instances, to say whether plants are definitely fine or medium and, in other cases, whether they are coarse or medium. When they present such a situation they can be used with plants of either texture classification. I refer to *Rhododendron carolinianum* as an example. This might be classified as either coarse or medium; thus, it can be used with plants of either coarse or medium texture.

Study texture more intently and think of it as you formulate planting plans. Its correct use makes for more effective plantings and better satisfied customers.

The direction in which a house faces also governs the selection of plants. When the exposure is south or west, and the soil is low in organic matter and unshaded, it is difficult to grow good plants of many of the broad-leaved evergreens. Because of the greater loss of water from the plants and soil in such an exposure, the soil should be supplied with organic matter. Finely granulated peat moss should be applied if the soil test does not show an OM reading of "high." When the water-holding



Illustration A—A *Rhododendron catawbiense* on the corner with mountain laurel, Kurume azaleas and yews in the connecting area.

Clarence E. Lewis is senior instructor in the school of horticulture at the Long Island Agricultural and Technical Institute, Farmingdale, N. Y.



Illustration B—Rock cotoneaster (*Cotoneaster horizontalis*) next to *Rhododendron catawbiense*.

capacity of the soil is improved, plants branch better and show richer green foliage. The planting of a tree to cast some shade is also helpful.

The eastern exposure is not so troublesome, because the sun does not pull so much water from a plant in the morning as it does at midday or during the afternoon. The addition of peat moss will probably not be amiss there, either.

The north exposure offers the greatest problem, since there are not many plants that grow well in the shade. Plants growing under northerly shade conditions often become too leggy and, consequently, are not well adapted for foundation plantings.

Plants suitable for foundations that have a northern exposure are listed below. Some accept more shade than others. The list is by no means complete.

Taxus baccata repandens.
Taxus cuspidata (spreading).
Taxus cuspidata nana.
Taxus (selected seedlings).
Abelia grandiflora.
Euonymus fortunei and varieties.
Euonymus patens.
Hedera helix and hardy varieties.
Ilex crenata convexa.
Ilex crenata helleri.
Ilex crenata (and other good varieties, such as Green Island).
Ilex glabra.
Ilex opaca.
Kalmia latifolia.
Leucothoe catesbaei.
Mahonia aquifolium (better as a basal grower where it is cut back).
Pachysandra terminalis.
Pieris floribunda.
Pieris japonica.
Rhododendron.
Sarcococca hookeriana humilis.
Vinca minor Bowles.
Azalea.
Benzoin aestivale.
Cornus florida.
Cornus mas.

Cotoneaster dielsiana.
Forsythia intermedia and varieties.
Fothergilla.
Ilex verticillata.
Ligustrum.
Myrica gale.
Rhodotypos scandens (kerrioides).
Symplocos paniculata.
Syringa josikaea.
Syringa villosa.
Syringa vulgaris.
Viburnum dentatum.
Viburnum dilatatum.
Viburnum opulus.
Viburnum tomentosum.
Zanthorhiza apiifolia.

There are other things to think about when plants are to be used in the shade. If the area has a poor circulation of air, growth is not so dense, and the appearance of the plant is often thin and leggy. Plants that withstand partial shade make better growth where there is a good circulation of air and even will ac-

cept more shade if the air is not stagnant.

Filtered shade such as that beneath a London plane tree encourages better growth than the dense shade cast by a Norway maple, for the light is better and the air itself is more conducive to good growth.

There are other ways of improving foundation plantings or giving them a more finished look. For instance, a tree or sometimes trees placed strategically on the lawn in front of a home improve the home and make it more a part of the planting. It tends to give depth, or a third dimension, that cannot be achieved in any other way. The same effect is created in good photography. The selection of the tree and consideration of its ultimate size are important. The larger the house and the area, the more adaptable are large trees. Small houses on small plots look better if planted with small trees, such as flowering dogwoods. A tree should rarely be planted on line with an entranceway or a direct window view. It should be placed so that you look under its branches to the house and its planting. It acts as a frame, encouraging you to view the house beyond.

The smaller the house and the property, the more important it is to beware of overplanting. If the house has simple lines, this is even more important.

Observe where the weight of the house is. If the tallest part of the house, or the greatest mass, is on one side, with a one-story garage on the other, then the largest number of plants should be used toward the

[Concluded on page 29.]



Illustration C—Draw an outline of an upright-branching tree, such as an American elm, and place on this illustration at the right of the garage, where the Pfitzer juniper is now. Notice the effect with and without the tree.

Washington Firm Passes Fiftieth Year

By Carol Wieting

Celebrating over fifty years of serving customers, the Bonnell Nurseries, Renton, Wash., owned and operated by Frank Bonnell, are among the oldest in the state from the standpoint of continuous operation under one management. Julius J. Bonnell, father of the present owner, died in 1939, having spent much of his life as a nurseryman and contributing to the advance of horticulture in the northwest.

The senior Mr. Bonnell started his business at Seattle in February, 1897. His first nursery consisted of eight acres in what is now one of the fine residential sections of the city, overlooking the University of Washington Arboretum. This area was later abandoned as a need for more land developed. In 1908 the firm bought fourteen acres at Kirkland, a small town near Seattle. This branch was operated until 1926. In response to the need for producing more camellias, rhododendrons and azaleas, heather and kindred plants, Mr. Bonnell acquired an additional twenty-seven acres of peaty bottom land near Bellevue. Still further expansion came in 1922, when an additional 140 acres was purchased, near Renton. This area was immediately put into wholesale production of ornamental plants and was the headquarters, for many years, of the firm's production and landscape departments.

In 1909, J. J. Bonnell was in charge of landscaping for the Alaska-Yukon-Pacific exposition, which was held at Seattle. On this project Mr. Bonnell worked closely in conjunction with Fred Dawson and the Olmsted brothers, landscape architects for the exposition. Cooperating again with these same landscape architects in 1931, Mr. Bonnell directed the landscaping of the state capitol grounds, at Olympia. Between those years and until his death in 1939, J. J. Bonnell continued to operate and develop the nursery, assisting in many of the foremost landscape plantings of the northwest.

In the early war years, level land near Seattle was difficult to find. To procure an area for an airfield, the United States government found it necessary to purchase all of the Bonnell Nurseries' land at Renton. The entire stock was sold within a few months. Frank Bonnell, who was carrying on his father's work, secured a new piece of land about a mile distant. Almost all of the new



Tree Provides Nursery Trade-mark.

area now is in production. A portion of the 104 acres is in truck garden crops, and the remainder is in nursery stock of general types for wholesale and retail sales. Specialized lines include rhododendrons and azaleas. To feature these plants, Bonnell Nurseries this year held a rhododendron show, at which were shown most of the better American and European developments in rhododendrons and

azaleas. Mr. Bonnell plans to make this show an annual event.

Immediately after the end of the war in Europe, Frank Bonnell made an extensive tour of France, Belgium, England, Holland and Ireland, in order to investigate conditions at the leading horticultural institutions and nurseries there. He was credited with being the first American nurseryman to enter Europe after the war. He made a second trip to the Continent and England in 1947 to search for new and improved materials for garden ornamentation. Being an ardent photography enthusiast, Mr. Bonnell took large numbers of colored motion pictures on both of his trips. These pictures, which include new plant materials and gardens in Europe, have been shown to many nurserymen's groups and garden clubs.

A specimen of sculptured sawara, or plum cypress, *Chamaecyparis pisifera squarrosa*, is planted in a conspicuous place at the landscaped entrance to Bonnell Nurseries so that it catches the eye of customers entering and leaving. Because of its unusual nature, the plant makes an impression on the customers and has become a landmark as well as a trade-mark. A recent photograph of it is reproduced on this page. A sketch of the plant is used in the firm's advertising. Use of a plant form makes good relationship publicity.



Eugene Sandel, Superintendent of Bonnell Nurseries, in a Block of Imported Magnolias.

Wages and Hours Law

RAISE MINIMUM WAGE.

Soon after the closing of the recent session of Congress, President Truman signed legislation raising from 40 cents to 75 cents per hour the minimum legal wage for workers in interstate commerce.

The amended law will apply to more than 22,000,000 persons employed in interstate commerce or in production for interstate commerce. Most of these are already being paid the minimum rate or more. According to a statement of the President when he signed the legislation, the act will increase wages to about 1,500,000 workers.

The higher legal wage rate and the other provisions of the law go into effect in ninety days from the date of signing, about the end of January.

The amendment exempts some workers previously included by administrative edicts, after members of Congress accused the wage-hour chief of violating the intent of Congress in passing the original law. It is estimated that 200,000 workers covered by previous rulings will be exempt under the amendments, by the limitation of coverage to persons doing work "directly essential" to production for interstate commerce.

The procedure for recovering back wages was changed in the new act to permit the wage-hour administrator to bring suit for underpayments in behalf of workers upon their written request. The maximum recovery now to be allowed is the amount of underpayment. The old law permitted workers to sue for double the amount of wages lost.

The 40-hour standard work week, with payment at time and one-half for additional hours, was retained in the new act. Congress gave encouragement to annual wage plans by permitting certain exemptions from overtime pay provisions in the case of employers paying a guaranteed annual wage.

WAGE-HOUR AMENDMENTS.

Amendments to the wage-hour law passed in the closing days of the recent Congress, to take effect ninety days from the date of enactment, do not much change the provisions affecting the nursery industry, with a few exceptions. "Any employee employed in agriculture" is still exempt from both the wage and hour provisions of the amended law, and agriculture is defined as previously.

No change was made in the provision exempting "any employee employed in a bona fide executive, administrative, professional or local retailing capacity, or in the capacity of outside salesman."

Clarifications in the law are outlined by R. P. White, executive secretary of the American Association of Nurserymen, as follows:

"Exempt from both the wage and hour provisions of the law is 'any employee employed in any retail or service establishment, more than fifty percentum of which establishment's annual dollar volume of sales of goods or services is made within the state in which the establishment is located.' Defined in the law for the first time, a retail or service establishment is 'an establishment seventy-five percentum of whose annual dollar volume of sales of goods or services (or both) is not for resale and is recognized as retail sales or services in the particular industry.' This clarifies the exemption of employees working in retail nursery outlets such as salesyards, as well as office employees in local retail landscape nurseries. The assumption had always been such employees as fit into this definition were exempt as a result of administrative ruling.

"The wage-hour division had extended coverage of the law to employees of concerns which were rendering services on the grounds of manufacturing plants which were producing goods for interstate commerce. Under the bill as agreed to, an employee will not be covered unless he is shown to have a close and direct relationship to the actual pro-

duction. For example, employees of a local independent nursery concern whose duties include mowing the lawn around the factory of a customer within the state, engaged in producing goods for interstate commerce, will not be covered.

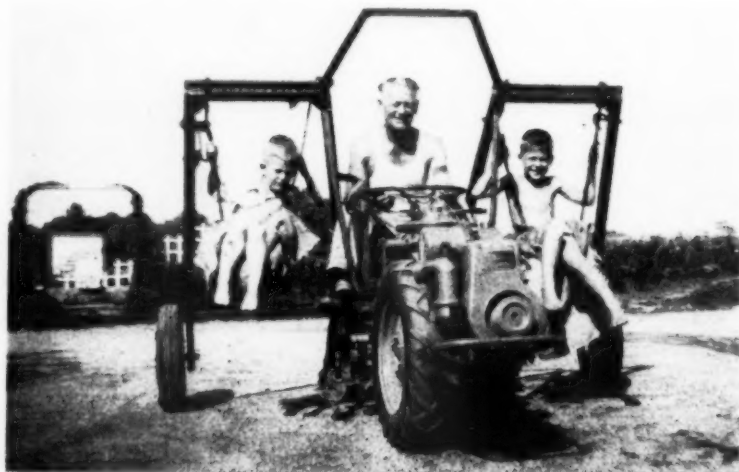
"Three tests for qualifying as a retail and service establishment, all of whose employees are exempt, are: (1) Over fifty per cent of annual dollar sales must be made within the state in which the nursery is located; (2) seventy-five per cent of the annual dollar volume of sales must not be for resale; (3) seventy-five per cent of the annual dollar volume of sales of goods or services must be recognized in the trade as retail sales or services."

TRACTOR BUILT TO SUIT.

After pushing a walking tractor through his nursery for twenty years, R. H. Miller, of Miller's Nursery, Elyria, O., decided to mechanize the cultivating operation if he had to build a suitable machine himself.

What he wanted was a tractor that could be driven between the nursery rows, yet which would not tip over because of its narrow wheel base. He achieved this by cutting down the body of a regular Bolens Ride Master to a width of twenty-two inches and attaching the framework that is seen in the illustration. With this apparatus, he can ride between rows of evergreens with a 4-foot 8-inch clearance of the frame which supports the two outside wheels.

The machine has a 44-inch wheel base and an 86-inch tread. It is equipped with a telescoping-type adjustable cultivator, which requires no wrench for adjustment and which is adjusted from the driver's seat.



R. H. Miller, Proprietor, Miller's Nursery, and Two Grandsons, Jim and Bill.

Varieties of Osmanthus

By F. C. Galle and E. E. Nank

The species of osmanthus are attractive evergreen shrubs often mistaken in identity for the hollies. The leaves of osmanthus are opposite or occasionally subopposite, while holly leaves are alternately arranged on a stem.

The name osmanthus was applied because of the white fragrant flowers and is made up from osme, signifying perfume, and anthos, flower. The genus belongs to the olive family. The flowers are small, yellowish-white and attractively fragrant, appearing in late spring or summer. The fruit is a bluish oval-shaped berry or drupe, but it is rarely seen on cultivated plants.

The osmanthus are generally considered southern plants, for none of them will endure extreme northern winters without protection. However, *O. ilicifolius* and *O. americanus* are occasionally found grown in protected areas north of the Ohio river in the general latitude of Philadelphia. *O. fragrans* is seldom grown successfully in the open north of Atlanta, Ga. Tennessee is about the northern limit for *O. fortunei*. These four species as represented on the leaf pattern chart are the most common in the trade of the ten or more known species.

The osmanthus should receive much the same treatment in cultivation as the hollies, planted in a well drained soil high in organic matter and set in sun or a partly shady situation.

O. americanus, devilwood osmanthus, is a native of our southern states and grows as a large shrub or small tree. The evergreen leaves are elliptic lanceolate, about two to four inches long, thick and glossy green. The fragrant flowers are borne in short panicles or nearly sessile, appearing in June. It is a good plant for the border and screen plantings, but not the best of the genus.

O. ilicifolius (aquifolium), holly osmanthus, is a native of Japan and is considered the best of the genus. The evergreen foliage resembles that of a holly, being oblong or oval, one to two inches long and glossy dark green. The leaves are stiffly armed with two to four teeth on each side. The sweet-scented flowers are borne in axillary clusters in late summer. The plant is an upright, compact, large shrub, working well as a specimen plant or corner plant in

foundation work. It also is used as a clipped hedge. It is a beautiful plant and should be more generally used.

O. ilicifolius myrtifolius, myrtle holly osmanthus, is a sport from the species, with smaller entire leaves. The plant is more dense and rounded than the species and can be used as an entrance or general foundation plant.

O. fortunei, Fortune osmanthus, is of hybrid origin of *O. ilicifolius* x *O. fragrans*, introduced from Japan. The holly-like evergreen leaves are oblong-ovate, two to four inches long, with six to ten spiny teeth on each side, and lustrous dark green. The fragrant axillary flowers appear in late spring. The plant is pyramidal in shape, reaching twelve feet in height. It should have wide use in the southern states as a specimen or foundation plant.

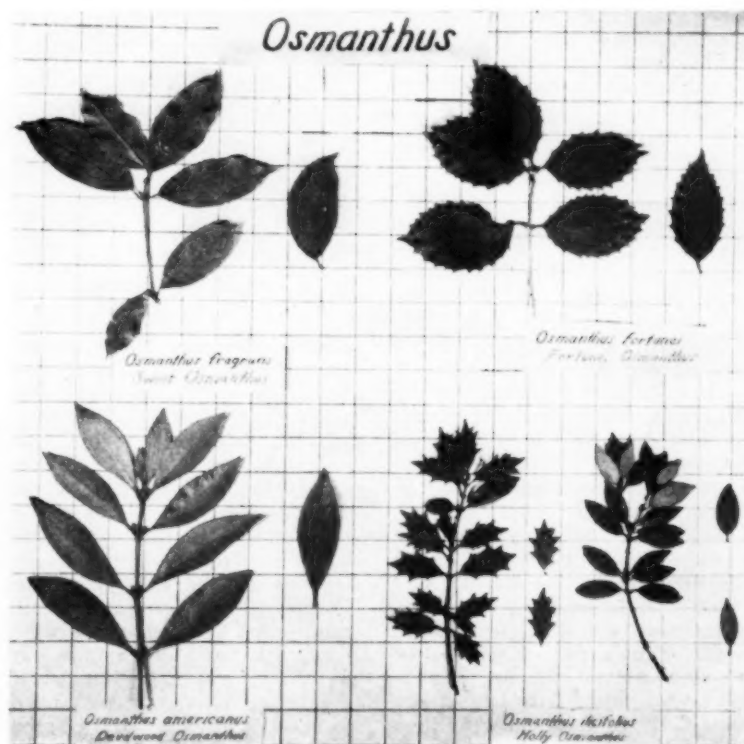
O. fragrans, sweet osmanthus, is a native of China and a popular evergreen shrub in the southern states. The glossy leaves are elliptic lanceolate, two to four inches long, with a sharp, fine-toothed margin. The flowers are yellowish-white, in clusters

appearing in June to August, and are pretty as well as sweet-scented. The plant has been commonly grown in the north as a greenhouse plant for its fragrant flowers. The plant is an attractive, upright-spreading shrub for borders and foundation work.

RECENTLY Rock Creek Nurseries, Rockville, Md., added a new office building and greenhouses attached. The new buildings are on Viers Mill road.

THE Saturday Evening Post recently told about the work that Jan de Graff has done in developing new types of lilies at Jan de Graff's Oregon Bulb Farm, Gresham, Ore.

OFFICES of Ilgenfritz Nurseries, Inc., Monroe, Mich., have been moved to South Telegraph road and Dunbar road, a short distance south of Monroe, where the firm's retail sales lot and wholesale evergreen sales lot are also located. The old office on East Front street has been abandoned. This move is the first step in consolidating the firm's operations at a single location.



Osmanthus fragrans,
Osmanthus americanus.

Osmanthus fortunei,
Osmanthus ilicifolius.

Rapid Spread of Oak Wilt in Midwest

By Noel B. Wysong

No longer can it be said truthfully that oaks are free of serious ailments, for, throughout the midwest, they are succumbing in alarming numbers to the oak wilt disease. Authoritative records of this disease date back to about 1929, according to Dr. A. J. Riker, professor of plant pathology, University of Wisconsin, Madison. In the years that followed discovery of the first wilting tree, dying oaks were reported with increasing frequency from various locations in the southern half of Wisconsin. Research studies to ascertain the agent that caused wilting and subsequent death of affected trees were begun by Dr. Riker and Dr. B. W. Henry, of the University of Wisconsin; Dr. C. S. Moses, Dr. C. Audrey Richards and others, of the United States Department of Agriculture forest products laboratory, and the Wisconsin conservation department. Drought, adverse site conditions and various other factors were considered as possible causal agents, but they were rejected after thorough tests. Eventually, the studies of these scientists resulted in the discovery of a hitherto unknown fungus, *Chalara quercina*, so named by Dr. Henry in 1944, as the causal agent of the oak wilt disease.

The disease attracted little attention at first, for it appeared to spread slowly, and it was believed that it might be confined to a relatively small area. As recently as 1943 it was unknown outside the southern, southwestern and western counties of Wisconsin and neighboring counties in Minnesota, Iowa and Illinois. Then, through some peculiarity of circumstances or conditions, the disease began spreading and has gained momentum with each passing season. It now is known to be distributed widely throughout the southern half of Wisconsin, southeastern Minnesota, the eastern two-thirds of Iowa and northern Illinois, extending from Kankakee southwesterly toward St. Louis. It has been found in five locations along the Mississippi and Ohio rivers between St. Louis and Paducah, Ky. In Missouri, oak wilt has been found at St. Louis, Mexico and, more recently, in the Lake-of-the-Ozarks region. Late in the summer of 1949 it was discovered at Gary, Ind., and has been reported from several locations thirty to forty miles south of Gary. The cases at Gary and in adjacent territory represent an advance of nearly fifty miles from any tree

known to be infected in 1948. The rate of spread also appears to be increasing within a given locality. In the forest preserve district of Cook county, Illinois, an area of approximately 38,000 acres, in which oak is the dominant species, two cases of oak wilt were found in 1948; this year seventy-two infected trees were found.

It is probable that all, or at least most, of the North American species of oaks are susceptible to the disease. Dr. S. M. Dietz, of Iowa State College, Ames, has determined through field observation and greenhouse inoculation that the following

giniana maritima, live oak. No species of oak has been found to be immune to the wilt disease.

Symptoms of Wilt.

Symptoms of the disease differ on the two major groups of oaks, the red and the white, and may, perhaps, vary with the species, the time of year at which infection occurs and the geographical location. The first noticeable evidence of the disease is the occurrence of discoloration in the terminal foliage of one or several branches, usually near the top of the tree.

In trees of the red oak group, the leaves tend to curl or cup upward slightly and become dull in color, and, if held up against the light, the inner tissues have a splotchy, muddy or water-soaked appearance. Later, the leaves turn bronze or reddish-brown. These symptoms appear progressively downward through the tree. The leaves may fall at any stage; in the Chicago area it has been noted that most of the leaves drop while still in the muddy-green color phase, comparatively few remaining attached to the tree and passing through the later color stages. Defoliation may be complete within two or three weeks from the time the first symptoms appear. No leaves observed have been flaccid to the touch in any of the color stages; rather, they seemed to be abnormally stiff and hardened. On the first wilt-infected red oak found in 1949 in the Chicago area, early foliage was sparse and light green in color; the upper one-third of the tree was suggestive of chlorosis. Typical symptoms developed later in this tree, defoliation occurring early in the summer. Some of the leaves on the uppermost branches remained attached, though withered and blackened, after the tree was dead. The development of sparse, pale spring foliage in the upper branches may be characteristic of trees infected late in the preceding autumn, and, in any area where oak wilt is known to be present, trees developing such foliage are definitely "suspects."

The leaves of infected trees in the white oak group become dull in appearance, and, though they may turn brown or bronze, usually they become light brown or tan. Later symptoms in this host group seem to vary with the location. In Wisconsin

[Continued on page 17.]



An Oak in Early Stages of Wilt Disease.

species definitely are susceptible: *Quercus alba*, white oak; *Q. borealis*, red oak; *Q. ellipsoidalis*, Hill's yellow oak; *Q. imbricaria*, shingle oak; *Q. macrocarpa*, bur oak; *Q. marilandica*, blackjack oak; *Q. muhlenbergi*, chinquapin oak; *Q. palustris*, pin oak; *Q. velutina*, black oak; *Q. coccinea*, scarlet oak; *Q. falcata*, southern red oak; *Q. falcata pagodaefolia*, swamp red oak; *Q. gambeli*, Gambel oak; *Q. garryana*, Oregon white oak; *Q. hemisphaerica*; *Q. laevis*, turkey oak; *Q. laurifolia*, laurel oak; *Q. montana*, chestnut oak; *Q. nigra*, water oak; *Q. phellos*, willow oak; *Q. prinus*, basket oak; *Q. robur*, English oak; *Q. shumardi*, Shumard oak; *Q. shumardi texana*, Texas red oak; *Q. suber*, cork oak, and *Q. vir-*

SLATTON NURSERY CO., McMinnville, TENN.

WHOLESALE PRICE LIST

	Per 100	Per 1000
ONE-YEAR CHERRY (Sour)		
11/16 to 1-in., well br.	\$50.00	\$450.00
9/16 to 11/16-in., well br.	45.00	400.00
7/16 to 9/16-in., well br.	40.00	350.00
5/16 to 7/16-in., well br.	30.00	250.00
Varieties: Montmorency, Early Richmond.		

	Per 100	Per 1000
ONE-YEAR CHERRY (Sweet)		
11/16 to 1-in., partly br.	50.00	450.00
9/16 to 11/16-in., partly br.	45.00	400.00
7/16 to 9/16-in.	40.00	350.00
5/16 to 7/16-in.	30.00	250.00
Variety: Black Tartarian.		

	Per 100	Per 1000
PLUM		
7/16 to 9/16-in.	40.00	
5/16 to 7/16-in.	35.00	
18 to 24 ins.	20.00	
Varieties: Abundance, Burbank.		

	Per 100	Per 1000
ONE-YEAR PEACH		
11/16-in. and up.	30.00	
9/16 to 11/16-in.	25.00	
7/16 to 9/16-in.	20.00	
5/16 to 7/16-in.	15.00	
2 to 3 ft., under 5/16-in.	10.00	

	Per 100	Per 1000
JUNEBUD PEACH		
7/16 to 9/16-in.	20.00	
2 to 3 ft.	15.00	
18 to 24 ins.	10.00	
Varieties: Elberta, J. H. Hale, Golden Jubilee, Red Bird, Halehaven, Rochester, Belle of Georgia.		

	Per 100	Per 1000
PEAR		
4 to 5 ft.	40.00	
3 to 4 ft.	35.00	
2 to 3 ft.	30.00	
18 to 24 ins.	20.00	
Varieties: Kieffer, Garber		

	Per 100	Per 1000
ONE-YEAR APPLE		
3 to 4 ft.	30.00	
2 to 3 ft.	25.00	
Varieties: Double Red Delicious, Yellow Delicious, Stayman Winesap, Rome Beauty, Yellow T. P., Jonathan Red.		

	Per 100	Per 1000
FIGS		
3 to 4 ft.	\$ 3.50	\$ 30.00
2 to 3 ft.	3.00	25.00
Variety: Brown Turkey.		

	Per 100	Per 1000
WALNUTS. Juglans Nigra (Black Walnuts).		
3 to 4 ft.	1.00	9.00
2 to 3 ft.	.80	7.00
18 to 24 ins.	.60	5.00

	Per 100	Per 1000
PLUM, NEWPORT. Purpleleaf.		
2 to 3 ft.	3.00	25.00
18 to 24 ins.	2.50	20.00

	Per 100	Per 1000
PRUNUS AMYGDALUS		
Red-flowering Peach.		
3 to 4 ft.	4.00	35.00
2 to 3 ft.	3.50	30.00

	Per 100	Per 1000
CORNUS FLORIDA		
White-flowering Dogwood.		
5 to 6 ft., well br.	5.00	45.00
4 to 5 ft., well br.	4.50	40.00
Seedlings.		
12 to 15 ins., grafting size.	3.50	\$30.00
6 to 12 ins., liners.	2.50	20.00

	Per 100	Per 1000
CORNUS FLORIDA RUBRA		
Red-flowering Dogwood.		
3 to 4 ft., well br.	17.50	150.00
2 to 3 ft., well br.	15.00	125.00

	Per 100	Per 1000
CERCIS CANADENSIS		
American Redbud.		
4 to 5 ft.	\$ 4.50	\$ 40.00
3 to 4 ft., tr.	4.00	35.00
2 to 3 ft., tr.	3.00	25.00

	Per 100	Per 1000
CHINESE ELM		
4 to 5 ft., tr.	3.00	25.00
2 to 3 ft., s.		3.50 \$30.00
18 to 24 ins., s.		2.00 18.00
12 to 18 ins., tr.		1.50 12.50

	Per 100	Per 1000
LIRODENDRON TULIPIFERA		
Tulip Tree.		
5 to 6 ft.	6.00	55.00
4 to 5 ft.	5.50	50.00

	Per 100	Per 1000
HYDRANGEA PEEGEE		
2 to 3 ft., tr.	4.00	35.00
18 to 24 ins., tr.	3.50	30.00
12 to 18 ins., tr.	3.00	25.00

	Per 100	Per 1000
OAKLEAF HYDRANGEA		
2 to 3 ft., tr.	4.00	35.00
18 to 24 ins., tr.	3.50	30.00
12 to 18 ins., tr.	3.00	25.00

	Per 100	Per 1000
ABELIA GRANDIFLORA		
3 to 4 ft., B&B	11.00	100.00
3 to 4 ft., bare root.	7.00	65.00
2 to 3 ft., B&B	7.50	70.00
2 to 3 ft., bare root.	5.00	45.00
8 to 12 ins., liners		8.00 70.00
6 to 8 ins., liners		7.00 60.00

	Per 100	Per 1000
LAGERSTROEMIA INDICA		
Crape Myrtle, pink and red.		
2 to 3 ft., tr.	4.00	30.00
18 to 24 ins., tr.	3.00	25.00

	Per 100	Per 1000
SPIRAEA VANHOUTTEI		
2 to 3 ft.		7.50
18 to 24 ins.		6.50
12 to 18 ins. (hedging grade)		5.50

	Per 100	Per 1000
ALTHAEA, bush form, pink and red.		
3 to 4 ft., tr.	2.50	20.00
2 to 3 ft., tr.	2.00	18.00

	Per 100	Per 1000
PRIVET, Ligustrum Amurense		
(Amur River North).		
18 to 24 ins., 2 br.		40.00
18 to 24 ins., 3 br.		50.00
2 to 3 ft., 4 br.		65.00

	Per 100	Per 1000
CHINESE WISTARIA, purple.		
(Grafted from blooming wood)		
One-year.		
No. 1	3.50	
No. 2	2.50	

	Per 100	Per 1000
ALMOND. Prunus Glandulosa		
Double, pink-flowering Almond		
(own root).		
2 to 3 ft., tr., well br.	4.00	35.00
18 to 24 ins., tr., well br.	3.00	25.00
12 to 18 ins., tr., well br.	2.50	20.00

	Per 100	Per 1000
LOMBARDY POPLAR		
4 to 5 ft., 2-year, tr.	4.00	30.00

	Per 100	Per 1000
WEIGELA FLORIBUNDA, red.		
2 to 3 ft.		10.00

	Per 100	Per 1000
WEIGELA HENDERSONI, dark pink.		
2 to 3 ft.		10.00

	Per 100	Per 1000
WEeping WILLOW		
4 to 5 ft.		40.00
3 to 4 ft.		30.00
2 to 3 ft.		25.00

	Per 100	Per 1000
LIGUSTRUM OVALIFOLIUM		
California Privet		
2 to 3 ft.		65.00
18 to 24 ins.		50.00

	Per 100	Per 1000
BERBERIS THUNBERGI ATROPURPUREA		
Red-leaved Barberry		
15 to 18 ins.		25.00
12 to 15 ins.		20.00

	Per 100	Per 1000
DEUTZIA, PRIDE OF ROCHESTER		
2 to 3 ft.		10.00

**NEW****GARD-N-GUN***Sprays* Soluble Insecticides or Fungicides

A compact, lightweight sprayer, ideal for small gardens. 1 1/2 gallon capacity with each filling of the 1/2 pint jar. Fine spray saturates leaf surfaces quickly. Touchomatic Control of spray. Flip it — turns on; flip it again — turns off. A touch of the thumb does all the work.

\$245

Retail Price
Complete
with 1/2 pint jar.

**NEW****GRO-GUN***Sprays* Soluble Fertilizers or Weed Killers

Feeds lawns or gardens while watering them. Sprays 15 GALS. with each filling of pint jar furnished, or 30 GALS. when using quart jar. Cover a small hole to spray properly proportioned fertilizer or weed killer. Remove finger to spray plain water. No mist, no side spray, no fog to drift. Dual Cap fits narrow neck bottles and wide mouth jars... attach fertilizer or weed killer bottles directly to the Gro-Gun.

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Retail Price
Complete
with pint jar.

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Fungicides

A truly universal sprayer for home gardens or large estates. NEW Interchangeable Jets — one for spraying plants and shrubs, one for spraying trees. Pistol grip and trigger control of water. Fine spray saturates leaf surfaces quickly. One filling of pint jar sprays 3 gallons.

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Complete with
pint jar and
interchangeable jets.

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HAS
8 Exclusive Features
that mean
**EASIER, FASTER
SALES FOR YOU!**

**Two NEW Sprayers
this season*

Bradson Sprayers attach to the garden hose and spray soluble insecticides, fungicides, fertilizers and weed killers the easy, efficient way. No tank to carry. No pumping required.

1. Always a soft, fan-shaped spray that won't whip or damage plants.
2. Proportions exactly the right amount of solution in every drop of spray.
3. Large spray holes won't clog.
4. Functions properly at any water pressure or flow.
5. Cleans in only 30 seconds.
6. Broken jars replaced from the kitchen.
7. Guaranteed.
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12076 Guerin St., North Hollywood, Calif.

Form No. 315.

and northern Iowa, it was observed, the discolored foliage remained attached in considerable abundance; in the neighborhood of Chicago, however, defoliation has occurred nearly as rapidly and completely as in trees of the red oak group. In articles concerning oak wilt in Iowa and Wisconsin, it has been stated that the disease progresses more slowly in white oaks than in red oaks and that infected trees in the red oak group may die within thirty to sixty days after the first symptoms appear, while white oaks may live for several years, dying back slowly and progressively from the top downward. Field observations in the Chicago area during the past two years indicate that bur oaks, *Q. macrocarpa*, may die there almost as quickly as infected red oaks.

External symptoms, wilting and discoloration of leaves followed by defoliation, may appear at any time during the spring and summer. In the Chicago area, the peak of the disease, in respect to visible symptoms, seems to occur about the middle of August. In Iowa and Wisconsin, wilting and discoloration are said to occur in greatest abundance during July. The weather probably is an influencing factor, for the greatest amount of wilt occurs during or immediately after a long, hot, dry period. As the fall season approaches and foliage takes on the usual autumn coloration, it becomes difficult, if not impossible, to distinguish normal trees from those infected with wilt. During the summer, however, infected trees, with their tan to bronze-colored leaves, are strikingly noticeable. Oddly, the bark of trees killed by the wilt seems to loosen and slough off much more quickly than does that of oaks dead from other causes.

In both the red and white oaks, longitudinal brown or blackish streaks often are found in the outer layers of sapwood of wilt-infected trees. The fact that no streaks are present cannot be accepted as proof, however, that the tree is free of the disease, for the fungus has been isolated from branch samples in which there was no sign of streaking. The time that elapses between infection and the appearance of the first symptoms has not been definitely established; it may vary with the time of year at which infection occurs, the point of infection, species, individual trees, or there may be other influencing factors as yet unknown. In inoculation experiments on woodland trees, conducted by Drs. Riker and Henry (Phytopathology 37: 735-743, 1947), the time between inoculation

[Continued on page 55.]

GARD-N-TYS

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THIS SEASON**

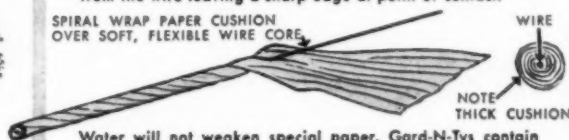
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MORE PROTECTION WITH GARD-N-TYS

The extra thick, super soft, paper cushion between wire core and plant or stem positively prevents damage even to tender types or marketable blooms. Outside stems on bunched cut flowers, or tender growth layer on growing plants cannot be damaged because spiral wrapped paper cushion won't tear or break when twisted, won't bend back from the wire leaving a sharp edge at point of contact.

SPIRAL WRAP PAPER CUSHION
OVER SOFT, FLEXIBLE WIRE CORE



NOTE
THICK CUSHION

Water will not weaken special paper. Gard-N-Tys contain no tars or compounds to rot away the cushion. No thin paper to break or tear and permit the wire to cut plants or rust. Annealed wire core may be bent and twisted easily without breaking... gives Gard-N-Tys exceeding strength.

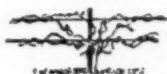
FASTER WITH GARD-N-TYS



Gard-N-Tys are faster, more satisfactory than twine, raffia, or other plant ties. Much faster than tying knots because you merely twist Gard-N-Tys... they're permanent.

Nothing to untangle. No knife to carry.

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Use Gard-N-Tys to stake trees or potted plants, to train shrubs, vines or ornamentals. Use them to bunch cut flowers or vegetables. Because their green color makes them almost invisible, use them in floral displays. Use them to sack field plants, ball roots, or bundle plants for shipment.

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Gard-N-Tys are packaged for the home gardener trade in colorful, selling displays. They're packed in bulk for commercial users, and they're wound in continuous 200 ft. lengths on spools for both. In your store, Gard-N-Tys make attractive sales displays. In your fields, they save money by saving time, labor and plants.



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12076 Guerin St., North Hollywood, Calif.

Form No. 315A

Plant Notes Here and There

By C. W. Wood

Notes made over the years on the small sea lavenders, statice, or limonium, according to your preference, have been assembled and are here presented in condensed form at the request of an Alabama reader. They have been condensed because the minute details of all the kinds would fill too long a space and similarity of many kinds would only make for repetition.

This similarity carries along all through the perennial kinds. Their differences, from the garden standpoint, are mostly in the size of rosette, height of flowering stem, size of inflorescence and season of bloom. All these differences are good news for the gardener, for they make it possible for him to have these flowers of grace during the entire summer and give him various kinds of sea lavenders suitable for most garden plantings, so long as the plants' needs can be supplied. These plants require little more than a sunny situation in light soil and, in the north, protection from cold. Coming mostly from southern Europe, the small kinds are rather tender so far north as here in northern Michigan, and we found that they suffered badly after snow left in early spring.

The smallest of these sea lavenders that I know is *S. minuta*, a plant of tiny rosettes and typical statice flowering stems seldom exceeding three inches in height. A neighbor who served in Europe during the war tells me that he saw literally acres of this statice in southern France, and Correvon records that it "adorns the rocks washed by the waves and forms dense shrubby little cushions of grayish-green foliage." That would make a wonderful sight when *S. minuta* is carrying its little lilac umbrellas.

Only a little taller than *S. minuta*, perhaps not over an inch taller, is *S. cosyrensis* from Corsica. Of it I can say little, for it did not prove hardy here. However, it does have a briefer flowering period than *S. minuta*, covering about the month of July, and the flowers are somewhat paler.

A little whitish-flowered one that I had under name of *S. reticulata*, a name for which I find no authority at the moment, was unusual in its color. It grew to be about eight inches tall, according to my notes, and, although they do not say so, I think it comes from the coast of western Europe.

It was quite hardy, as were two others from the same coast, *S. lychnidifolia* and *S. auriculafolia*, both on the lavender side, though the red bracts of the former set it aside as a garden ornament. These two grow to be six or eight inches tall and bloom from July onward.

There are a number of other kinds under a foot in height, but the foregoing represent the ones usually found in commerce. Unlike the tall ones, these dwarfs never become floppy in windy, rainy weather, when the others tend to become top-heavy. Where hardy, there are few better rock garden plants to relieve the monotony of the usual mat and cushion plantings. Statice may be grown from seeds.

Clintonias.

Most of the clintonias, a genus of American lily cousins which honors DeWitt Clinton, a famous New York governor of early days, are choice plants that require more than the ordinary amount of care, and thereby no doubt hangs the tale of their neg-

lect. But to the gardener who is looking for delicate beauty, they are worth all the care needed to keep them contented. Much of the dissatisfaction with these plants which is reported from time to time in amateur journals is to be accounted for, I suspect, by the selection of the wrong species for the particular spot the plant is to be given in the garden. If experience here is a sound basis for judgment, it is safe to say that there is a kind that will give good results in all except the hottest parts of the country. If a gardener in the south bought *Clintonia borealis*, he would be quite likely to fail with that northerner, because it is a creature of the cold moist woods of the boreal and subboreal regions; if his choice were *C. umbellulata* (not *C. umbellata*, as usually spelled in lists), a species with a range from New York to Georgia, or *C. andrewsiana*, a native of the redwood forests of California, his

LINERS

	Per 100	Per 1000
<i>Mahonia aquifolia</i> , 1-yr., S., 2 to 4 ins.	\$ 3.25	\$ 22.50
<i>Hex crenata</i> (From convexa seeds), 2-yr., S., 3 to 5 ins.	7.50	60.00
These produce very satisfactory hardy bush-shaped specimens, somewhat variable in character.		
<i>Hex crenata convexa</i> , 2-yr., T., 6 to 10 ins.	22.50	180.00
2-yr., T., 10 to 15 ins.	30.00	250.00
<i>Hex crenata rotundifolia</i> , 2-yr., T., 6 to 10 ins.	22.50	180.00
2-yr., T., 10 to 15 ins.	30.00	250.00
See our Trade List for other varieties and grades.		

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QUALITY LINERS

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Red Flg. Dogwood 10 to 15 ins. grafts.	\$60.00
Franklin Tree (<i>Franklinia</i>) 8 to 12 ins., 2-yr.	25.00
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Send for new Fall List

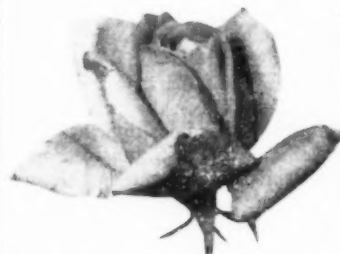
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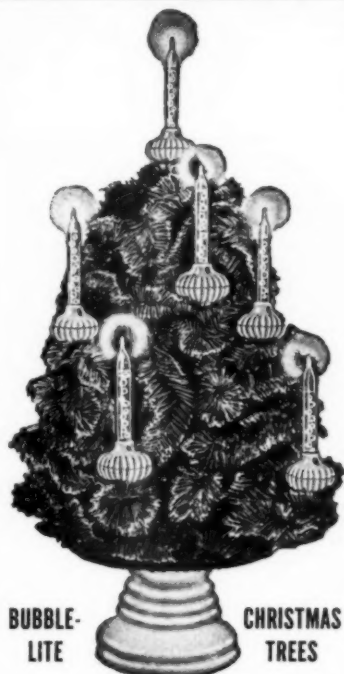
PIERIS JAPONICA

Pieris japonica sells on sight. It is attractive in every season. Its evergreen foliage is always shining color during the growing season. First red, then apple green and finally dark green. During the fall and winter seasons, light green tawny of flower buds cover the plant. At the first crack of spring, these open into lily-of-the-valley-like white flowers that last a long time. 1 to 2 ins., S., \$5.00 per 100; 2 to 3 ins., T., \$10.00 per 100; 3 to 6 ins., T., \$15.00 per 100.

Send for list of other unusual plants.

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No. 501G. 18 ins., Green, lighted by nine individual Bubble-Lites—shimmering tubes of colorful glass alive with bubbling action. Each \$ 5.35
 No. 502W. 18 ins., White, Each. 5.35
 No. 503G. 26 ins., Green, 18 lights. Each 10.75
 No. 504W. 26 ins., White, Each... 10.75

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25-watt bulb in base lights, 10 bubbling glass Candle-Lites that never burn out, 16 ins. tall.

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No. B-200. 2-in. assorted bells (list 15c each).

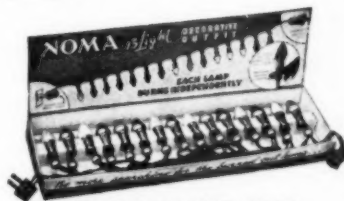
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 Ctn. of 12 boxes..... 14.40
 Case of 24 boxes..... 28.00

No. B-400. 4-in. Red Lustre Bells.

No. S-400. 4-in. Snow Bells, white snow finish.

No. JF-400. 4-in. Jack Frost Bells. Feathered frost silver finish.

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Wired in multiple with sturdy attaching clips.

No. 3010. 7-light, Each.....\$ 1.40

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EXTRA LAMPS. No. C7 1/2. Box of 10 assorted.

Box.....\$1.00 Case of 500.....\$45.30

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Large lamps, thoroughly waterproofed.

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No. 3215. 15-light, Each..... 4.12

Case of 10 sets..... 39.24

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Brightly Colored

Translucent

Unbreakable Plastic

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SANTA-GLO

8 1/2 ins. high, 8 3/4 ins. wide. Can be used as tree top, stand-up, or wall decoration.

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Swiss chimes produce sound effects for this heart-warming Christmas street scene. Colorful lighted lamppost, all durable plastic, 9 ins. high, 9 1/2 ins. wide.

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We are justly proud of **Goldflame Honeysuckle**, a wonderful plant which we introduced a few years ago. Until now we have never been able to produce enough to supply the demand. The large flame-coral trumpets lined with gold, fragrant after nightfall, appear in immense showy clusters the same year the plant is set out. Reaching its full glory of bloom in early summer, it nevertheless flowers abundantly from May until hard frost. The dark, blue-green foliage is attractive in itself and makes a perfect background for the brilliance of the flowers. Hardy in all parts of the country.

Allowed to grow naturally **Goldflame** will climb a trellis or spread as a ground cover; if pruned it becomes a striking specimen shrub. Planted in a row and sheared it gives a smashing effect as an everblooming hedge. For best results, plant **Goldflame** where it will get sunlight at least half of the day.

Goldflame should be in every nursery and salesyard. Use liberally in landscape plantings.

No. 1, field-grown plants
\$4.50 per 10; \$40.00 per 100; \$350.00 per 1000.

THE WILLIS NURSERY CO.

"Your Wholesa'e Nurserymen"

OTTAWA, KAN.

chances for success would be much brighter.

The several species differ more in flower and fruit than they do in foliage, identification by the last character being rather difficult. Of our two easterners, *C. borealis* is much the showier, with nodding, bell-shaped, creamy-yellow flowers, followed by conspicuous blue beads, which are the glory of the plant. The other, *C. umbellulata*, has white flowers and black fruits. The showiest of the lot is *C. andrewsiana*, with rose-pink to reddish-pink flowers and showy blue fruits. *C. uniflora*, which grows naturally from Alaska southward into the United States, with usually solitary, white flowers, is less showy than the others and proved quite difficult to grow here; in fact, too difficult to compensate for its lack of beauty.

All the clintonias may be propagated by division and from seeds, the latter not being difficult, but rather slow. Perhaps it would be too slow in these days of hurry-up and quick turnovers. Seeds should be planted as soon as ripe, preferably in a shady bed made of sand, screened leaf mold and finely chopped sphagnum or acid peat. Seedlings grow slowly at first, but if one takes care to see that they do not suffer from heat or dry weather, they should come along readily after becoming established.

Aconitum Fischeri Wilsoni.

The combination of a letter asking for a brief note on aconitum culture and a visit in September to a garden where much was made of *Aconitum fischeri wilsoni* prompts this note.

At the outset, it may be said that this monkshood, an introduction of the late Ernest H. Wilson, who brought it from China on one of his trips to that land, is one of September's choicest offerings. Although it has been in commerce for years, *A. fischeri wilsoni* is seldom seen in gardens or nurseries; so it should be a good item for specialists as well as for the neighborhood grower, especially if he grows on a heavy soil. In a rich, heavy soil (with the accent on heavy, for no monkshood that I know does well in a light sand), this one should grow from five to seven feet tall, making a stately object in any planting, and should produce an immense number of light blue flowers during September.

The culture and propagation of monkshoods are not always easy, facts which add much zest and a good profit to the successful cultivator. They may be grown from seeds by the careful. Weeds in the seedbed are often the cause of heavy losses, for

OH MAN - HOW THE MONEY ROLLS IN!

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5 REASONS WHY:

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2. Make prettier displays, and attract best type customers.
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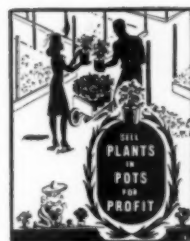
POT NOW peonies, poppies, lilies and bleeding hearts, for spring sales when demand is greatest. Carry in outdoor frames through the winter. They will bloom beautifully next spring, and sell well.

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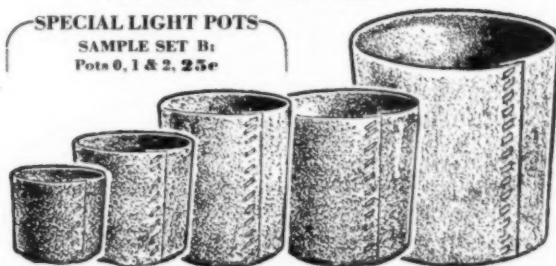


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SAMPLE SET A: Pots 1, 2 & 3, 25c

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For roses and shrubs.

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For large shrubs and transplanting.

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For large shrubs, fruit trees, evergreens. Sample 25c postpaid.

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We are in need of the following list of stock for spring, 1950, use. Please quote your best prices and specify quantities on all items you can furnish.

- 1000 *Rhus Cotinus* or *Cotonoides*, 2 to 3 ft.
- 1000 *Prunus Pissardi* or *Newport*, 4 to 5 ft.
- 1000 *Callicarpa Purpurea*, 18 to 24 ins.
- 3000 *Euonymus Alatus Compactus*, 15 to 18 ins.
- 1000 *Euonymus Patens*, 18 to 24 ins.
- 5000 *Hydrangea*, French Blue, 5 to 6 Br.
- 500 *Honeysuckle*, *Korolkowi*, 2 to 3 ft.
- 2000 *Jasminum Nudiflorum*, 18 to 24 ins.
- 1000 *Lilac*, *Chas. Joly*, 18 to 24 ins. and 2 to 3 ft.
- 1000 *Lilac*, *Chas. X*, 18 to 24 ins. and 2 to 3 ft.
- 1000 *Spiraea Callosa Alba*, 12 to 18 ins.
- 500 *Viburnum Tomentosum Plicatum*, 18 to 24 ins.
- 5000 *Weigela*, *Variegated*, 18 to 24 ins.
- 5000 *Euonymus Radicans*, 2-yr., No. 1
- 3000 *Teucrium Chamaedrys*, 6 to 9 ins.
- 7500 *Barberry*, *Red-leaved*, 9 to 12 ins., 2-yr. trans.
- 1000 *Anemone Alice* (field-grown)
- 1000 *Anemone Alba* (field-grown)
- 1000 *Anemone Hupehensis* (field-grown)
- 1000 *Anemone September Charm* (field-grown)
- 2000 *Aster Violetta* (field-grown)
- 5000 *Iberis Sempervirens*
- 1000 *Veteran Peach*, 9/16-in.
- 500 *Veteran Peach*, 7/16-in.
- 1000 *Veteran Peach*, 5/16-in.

ROSES WANTED

- 10,000 *Golden Salmon Rose*, No. 1
- 5000 *Gloria Mundi*, No. 1
- 5000 *Pinocchio*, No. 1
- 5000 *World's Fair*, No. 1
- 3000 *Baby Chateau*, No. 1
- 1000 *Margaret McGredy*, No. 1
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Over 20 years of service to the Wholesale Nursery Trade.

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GET YOURS FIELD-FRESH AND FREEZE-FREE.

PECAN TREES

WALNUT, FIG

PERSIMMON

Wholesale Catalog.

to pull weeds after the monkshood seeds have germinated usually means the death of the seedlings. If one has a weedless frame and the plants have sufficient room to remain in the seed-bed for a full year, there should be little trouble in seedage.

Vegetative reproduction is generally to be preferred if a greenhouse is available. In that case, healthy corms may be potted up in late autumn, left in a coldframe until after heavy freezing weather and then taken into a cool house of 25 to 30 degrees, where the temperature is gradually increased until 45 degrees is reached in early March. New corms will have developed by planting-out time in April or May, depending upon one's climate and the weather, and these should be broken off and set in the field.

A Hardy Begonia.

A bit of correspondence with a begonia specialist and a little delving into the literature on the subject of begonias have brought out some notes on *Begonia evansiana*, which it may be profitable to include here.

This begonia is not new, as some of the catalogs continue to state, having been introduced into cultivation in Europe in the early part of the nineteenth century. The first reference I found in my cursory examination of the literature shows that the plant was being cultivated in England at Kew Gardens in 1804. James Abercrombie, in his "Practical Gardener" in 1834, speaks of it as being one of the commoner greenhouse plants of that time, saying that "the stem dies down in autumn, having produced small bulbs at the joints, from which plants are produced the succeeding spring. There is a bulb at the root, which will send up a new stem."

A little later Mrs. Loudon, in her "Ladies' Companion to the Flower Garden," speaks of it, though she calls it *B. discolor*, as being the commonest kind at that time, which to be specific was in the 1840's. "B. discolor," she wrote, "which has the leaves beautifully veined with crimson underneath, is the commonest kind, and it thrives in the greenhouse or in a room, throwing out numerous suckers, each with a tuberous root which only requires separating from the parent and potting to become a fresh plant. The only objection to the culture of this plant is that it is likely to be infested with red spider. When planted out in summer, it continues to produce flowers for several months." It need only be added that the flowers are large, pale pink or flesh-colored, on plants to two feet in

FINISHED STOCK FOR FALL, 1949

American Arborvitae (Broad pyramids)	Each
2 to 3 ft., B&B.....	\$2.00
3 to 4 ft., B&B.....	2.75
Azalea mollis	
12 to 15 ins., B&B.....	1.25
15 to 18 ins., B&B.....	1.50
Hemlock (Broadly sheared)	
2 to 3 ft., B&B.....	2.00
Leucothoe catesbaei	
12 to 15 ins., B&B.....	1.25
Mugho Pine , 24 to 36 ins., B&B.....	1.25
Pieris Japonica	
12 to 15 ins., B&B.....	1.25
15 to 18 ins., B&B.....	1.60
18 to 21 ins., B&B.....	1.90
Rhododendron Hybrids	
12 to 15 ins., B&B.....	1.75
15 to 18 ins., B&B.....	2.50
Taxus capitata	
24 to 30 ins., B&B.....	3.00
30 to 36 ins., B&B.....	4.00

Order not less than 10 of a kind. No boxing; truck or carloads only. Jap. beetle certification provided. Cash with order.

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height. Many more quotations could be given here, some of them more learned than those from Mr. Ambler and Mrs. Loudon, but this is sufficient for our purpose and sets the stage for the introduction of a worthy plant.

The catalogs are nearer right, though, when they call *B. evansiana* hardy. In fact, they are more nearly correct than most of the literature, which leaves the impression that the plant is capable of standing only a few degrees of frost. "Hortus" merely states that it "stands some frost." Coming from China and Japan, this plant shows some difference in the hardiness of material from the different parts of its range, and that probably accounts for some of the reference to its hardiness or its lack of hardiness. It proved not fully hardy here in a climate where 30 degrees below zero is not unheard of, but it might be fully hardy if one could find an especially hardy strain and give it good protection. On the other hand, I remember a planting about fifteen years ago in the botanical garden at Butler University, Indianapolis, Ind., which the director said had withstood two periods of 10 degrees below zero without protection except from the fallen leaves of near-by trees. The difference of opinion regarding the plant's hardiness referred to previously will perhaps be more readily reconciled when we remember that its natural range extends from Java into Japan. Material from the former island probably would be unable to

[Continued on page 61.]

LINING-OUT STOCK — FALL, 1949-SPRING, 1950

Heavy liners from field beds of 1, 2 and 3-year plantings. X indicates times transplanted. 25 of a kind at 100 rate; 300 of a kind at 1000 rate; 100 each variety, in transplants, 5 varieties, at the 1000 rate. Shipped express or parcel post. Terms: Cash with order. Japanese beetle certification provided upon request. Write for our latest listing of nursery stock. Ready now.

	rate	each
Azalea mollis , 2 to 5 ins., X, 1-yr. (Spring).....	\$0.15	\$0.12
Azalea mollis , 6 to 12 ins., X, 2-yr.....	.25	.22
Azalea mollis , 6 to 9 ins., XX, 3-yr. branched.....	.40	.40
Azalea mollis , 9 to 12 ins., XX, 3-yr. branched.....	.65	.55
Azalea mollis , 12 to 15 ins., XX, 3-yr. branched (B&B add 25c).....	1.00	..
Azalea mollis , 12 to 18 ins., XXX, 4-yr. branched (B&B add 25c).....	1.25	..
Azalea kaempferi hyb., 4 to 6 ins., XX, 2-yr.....	.25	..
Azalea kaempferi hyb., 6 to 9 ins., XX, 3-yr.....	.35	..
Azalea kaempferi hyb., 9 to 12 ins., XX, 3-yr.....	.45	..
Buxus sempervirens , 4 to 8 ins., XX, 2-yr.....	.18	..
Buxus welleri , 4 to 8 ins., X, 1-yr.....	.18	..
Chamaecyparis lawsoniana , 8 to 12 ins., sdig., 2-yr.....	.10	.08
Chamaecyparis lawsoniana , 6 to 10 ins., X, 1-yr.....	.15	.13
Chamaecyparis lawsoniana , 10 to 15 ins., 2-yr.....	.20	.18
Chamaecyparis filifera aurea , 4 to 8 ins., X, 1-yr.....	.15	.12
Chamaecyparis filifera aurea , 8 to 10 ins., XX, 2-yr.....	.22	..
Chamaecyparis pisifera aurea , 6 to 10 ins., X, 1-yr.....	.15	.12
Chamaecyparis pisifera aurea , 9 to 12 ins., XX, 2-yr.....	.20	.18
Cotoneaster horizontalis , 6 to 9 ins., X, 1-yr.....	.18	..
Cytisus purpureus (Scotch Broom), X, 2-yr.....	.15	.14
Euonymus fortunei , 4 to 8 ins., X, 1-yr.....	.10	.08
Euonymus fortunei , 6 to 10 ins., XX, 2-yr.....	.15	.12
Euonymus fortunei , 9 to 12 ins., XXX, 3-yr. cutback.....	.25	.20
Euonymus coloratus , 4 to 8 ins., X, 1-yr.....	.10	.08
Euonymus coloratus , 6 to 12 ins., XX, 2-yr.....	.18	.16
Euonymus fortunei erectus , 4 to 8 ins., X, 1-yr.....	.10	.08
Euonymus fortunei erectus , 8 to 12 ins., XX, 2-yr.....	.18	.15
Euonymus patens , 8 to 12 ins., XX, 2-yr.....	.18	..
Euonymus vegetus , 6 to 12 ins., XX, 2-yr.....	.18	..
Hex crenata , 3 to 5 ins., X, 1-yr.....	.12	.11
Hex crenata , 4 to 6 ins., XX, 2-yr.....	.17	..
Hex crenata , 6 to 9 ins., XX, 3-yr.....	.22	..
Hex crenata bullata, 4 to 6 ins., X, 1-yr.....	.18	.16
Hex crenata bullata, 6 to 8 ins., XX, 2-yr.....	.25	..
Hex crenata bullata, 8 to 12 ins., XXX, 3-yr.....	.45	..
Hex glabra , 4 to 6 ins., X.....	.18	.16
Hex glabra , 6 to 8 ins., X, 2-yr.....	.24	.22
Hex glabra , 8 to 10 ins., XX, 3-yr.....	.30	..
Hex glabra , 10 to 15 ins., XXX, 3-yr.....	.50	..
Hex rotundifolia , 3 to 5 ins., X, 1-yr.....	.13	.12
Hex rotundifolia , 4 to 6 ins., XX, 2-yr.....	.18	.16
Hex rotundifolia , 6 to 8 ins., XX, 2-yr.....	.24	..
Hex rotundifolia , 8 to 12 ins., XXX, 3-yr.....	.60	..
Juniper , Andorra, 6 to 9 ins., X, 1-yr.....	.24	.22
Juniper , Andorra, 9 to 12 ins., XX, 2-yr.....	.30	.28
Juniper , Irish, 6 to 8 ins., X, 1-yr.....	.17	.15
Juniper , Irish, 8 to 12 ins., XX, 2-yr.....	.24	.22
Juniper , Strita, 3 to 5 ins., X, 1-yr.....	.16	.16
Juniper , Strita, 5 to 8 ins., XX, 2-yr.....	.25	..
Juniperus chinensis pfitzeriana , 6 to 8 ins., XX, 2-yr.....	.25	..
Juniperus chinensis pfitzeriana , 8 to 12 ins., XX, 2-yr.....	.35	..
Juniperus communis depressa plumosa aurea , 6 to 9 ins., X, 1-yr.....	.18	..
Juniperus glauca heztl., 6 to 8 ins., X, 1-yr.....	.17	.15
Juniperus glauca heztl., 8 to 12 ins., X, 2-yr.....	.25	.20
Juniperus glauca heztl., 8 to 12 ins., XX, 2-yr.....	.25	..
Juniperus glauca heztl., 12 to 15 ins., XX, 2-yr.....	.35	..
Juniperus horizontalis glauca , 6 to 8 ins., X, 1-yr.....	.15	..
Juniperus horizontalis glauca , 8 to 12 ins., XX, 2-yr.....	.20	.18
Juniperus virginiana , 8 to 12 ins., sdig., 2-yr.....	.07	.06
Koeleuteria paniculata , 4 to 8 ins., sdig., 1-yr.....	.10	.09
Larix europaea , 6 to 12 ins., X, 2-yr.....	.10	.08
Leucothoe catesbaei , 4 to 6 ins., X, 1-yr.....	.15	.13
Leucothoe catesbaei , 8 to 12 ins., XX, 2-yr.....	.25	.22
Liquidambar styraciflua , 6 to 10 ins., sdig., 1-yr.....	.04	.03
Picea excelsa , 4 to 8 ins., X, 3-yr.....	.12	..
Pieris floribunda , 6 to 9 ins., X, 1-yr.....	.25	..
Pieris floribunda , 10 to 15 ins., XX, 3-yr.....	.50	..
Pieris japonica , 6 to 8 ins., XX, 3-yr.....	.45	..
Pieris japonica , 8 to 12 ins., XXX, 3-yr.....	.65	..
Pieris japonica , 12 to 15 ins., XXX, 3-yr.....	1.00	..
Pieris mariana , 4 to 8 ins., X, 1-yr.....	.65	..
Pieris mariana , 8 to 10 ins., XX, 2-yr.....	.65	..
Pieris mariana , 10 to 15 ins., XX, 3-yr.....	.90	..
Pinus montana mugo , 2 to 5 ins., sdig., 2-yr.....	.05	.04
Platanus orientalis , 12 to 18 ins., sdig.....	.10	..
Pyraeantha lalandi , 8 to 12 ins., XX, 2-yr.....	.18	..
Quercus palustris , 4 to 8 ins., sdig., 1-yr.....	.08	.06
Quercus palustris , 8 to 15 ins., sdig., 1-yr.....	.12	.10
Rhododendron hybrid , 6 to 9 ins., XXX, 3-yr.....	.65	.55
Rhododendron hybrid , 9 to 12 ins., XXX, 4-yr.....	.85	.70
Rhododendron hybrid , 12 to 15 ins., XXX, 4-yr. (B&B add 25c).....	1.50	..
Rhododendron hybrid , 15 to 18 ins., (B&B add 25c).....	2.25	..
Taxus brownii , 3 to 6 ins., X, 1-yr.....	.14	.12
Taxus brownii , 6 to 8 ins., X, 1-yr.....	.18	.16
Taxus capitata , 6 to 9 ins., X, 1-yr.....	.15	..
Taxus capitata , 4 to 6 ins., XX, 2-yr.....	.18	.15
Taxus capitata , 6 to 8 ins., XX, 2-yr.....	.25	..
Taxus capitata , 8 to 12 ins., XX, 3-yr.....	.35	..
Taxus cuspidata , 6 to 8 ins., X, 1-yr.....	.12	.11
Taxus cuspidata , 6 to 9 ins., XX, 2-yr.....	.15	.12
Taxus cuspidata , 6 to 9 ins., XX, 2-yr.....	.20	.18
Taxus cuspidata , 8 to 10 ins., XX, 3-yr.....	.28	..
Taxus cuspidata , 10 to 15 ins., XX, 3-yr.....	.35	..
Taxus media hatfield, 3 to 6 ins., X, 1-yr.....	.14	.12
Taxus media hicksii, 3 to 6 ins., X, 1-yr.....	.14	.12
Taxus media hicksii, 6 to 8 ins., X, 1-yr.....	.18	.16
Thuja occidentalis , 4 to 8 ins., 2-yr.....	.08	.06
Thuja occ. elliptica , 6 to 9 ins., XX, 2-yr.....	.15	..
Thuja occ. elegantissima lutea , 6 to 9 ins., XX, 2-yr.....	.25	..
Thuja occ. globosa , 6 to 8 ins., XX, 2-yr.....	.28	.18
Thuja occ. globosa nana , 2 to 5 ins., X, 1-yr.....	.15	.13
Thuja occ. Hill's Golden , 4 to 6 ins., X, 1-yr.....	.18	.16
Thuja occ. plicata , 6 to 9 ins., XX, 2-yr.....	.18	..
Thuja occ. pyramidalis , 4 to 6 ins., X, 1-yr.....	.15	.13
Thuja occ. pyramidalis , 6 to 8 ins., X, 1-yr.....	.20	.18
Thuja orientalis , 6 to 8 ins., sdig., 1-yr.....	.05	.03
Thuja orientalis , 6 to 9 ins., sdig., 2-yr.....	.08	.06
Tsuga canadensis , 9 to 12 ins., XX, 4-yr.....	.28	..
Tsuga canadensis , 12 to 15 ins., XXX, 5-yr. field.....	.60	.50
Viburnum opulus nanum , 4 to 8 ins., XX, 3-yr.....	.20	.18

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Honey Locust as a Shade and Lawn Tree

By F. L. O'Rourke

Interest in the selection of desirable shade and lawn trees has increased rapidly during the past few years. The ravages of the Dutch elm disease and phloem necrosis on the American elm and the threat of the oak wilt menace to our native oaks have influenced many plantmen to seek a suitable substitute which may be relatively immune to serious diseases. Observations throughout many sections of the United States and Canada indicate the desirability of the honey locust, *Gleditsia triacanthos*, as a tree possessing many of the qualifications deemed essential for shade and lawn purposes.

Approximately twelve species of *Gleditsia* have been described. Three are native to North America, one to South America, one to the Caspian sea area and the others to China and Japan. Several of the Asiatic species have been planted in a limited way in the United States, but, as yet, there is little indication that any of these will prove to be horticulturally important.

The water, or swamp, locust, *Gleditsia aquatica*, is found in its native range throughout the southern states, which extends roughly from South Carolina to Texas. It is little used as an ornamental, being more straggly in appearance than its northern relative, *Gleditsia triacanthos*. It may possess more hardiness than its southern range would indicate, for there is a fairly presentable mature tree in Highland park, Rochester, N. Y.

Another North American species, the Texas honey locust, *Gleditsia texana*, is supposedly a hybrid between *Gleditsia triacanthos* and *Gleditsia aquatica*. It is a relatively fast-growing tree and endures a hot, dry climate well. It has been suggested that this species possesses "hybrid vigor." It is probably worthy of trial as a street tree in some sections of the southwest.

The common northern honey locust, *Gleditsia triacanthos*, has a native range throughout the entire midwest, extending from the Appalachians to the Great Plains and from Ontario to Texas. It has been widely

planted throughout most of the United States and apparently is growing satisfactorily from the Atlantic to the Rockies. It is extremely tolerant to a wide pH range and thrives on a variety of soils from poorly aerated, moist sites in portions of the midwest to the droughty conditions of western Kansas and Nebraska. Hardiness is apparently correlated with early maturity of the current-year shoots. The more northern strains cease growth fairly early and overwinter well in regions where the winter temperature drops to 30 degrees below zero, Fahrenheit, or lower.

Under conditions of high fertility and adequate moisture, the honey locust is a rapid-growing tree and may attain a height similar to the undesirable Chinese elms and silver maples in the same period of time. The ultimate height may be as great as 140 feet when it reaches its maximum size at about 120 years of age. It is long-lived. A tree recently removed at

Dayton, O., showed 327 annual rings.

The long, multiple-pointed thorns are outgrowths from true buds developed in the stem and branches. As the tree matures, the occurrence of the thorns on the new growth decreases until finally the upward and outward portions of the branches are thornless. When budwood or scion wood is taken from these thornless regions, the resulting budded or grafted trees will remain forever thornless, and buds taken in turn from these trees will continue to transmit the thornless condition.

Sex may also be controlled, in part, by propagation. Individual honey locust trees vary in the type and position of the flowers they bear. Some have perfect flowers, some staminate

LINING-OUT STOCK SPECIAL

FALL, 1949—SPRING, 1950

Azaleas, Berberis, Boxwood (Old English), Dogwoods, Lilacs, Red Maples, Taxus, etc.

Highest quality. Discount for quantity orders. Ask for list.

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Fall, 1949

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Address by F. L. O'Rourke, assistant professor of horticulture at Michigan State College, East Lansing, Mich., at the annual meeting of the American Institute of Park Executives, at Detroit, Mich., September 21.

"LOOK TO LEGHORN'S FOR YOUR QUALITY LINERS"

The following is our offering of liners for Fall or Spring delivery. Order now, so as to be assured of quality liners for your field plantings.

Taxus Cuspidata		Per 100	Per 1000	Taxus Hicksi		Per 100	Per 1000
2-yr., T		\$30.00	\$250.00	2-yr., T		\$30.00	\$250.00
3-yr., T, cutback		35.00	300.00	3-yr., T		35.00	300.00
5-yr., TT		55.00	500.00	6-yr., TTT		80.00	750.00
Taxus Cuspidata Nana		True dwarf form.		Taxus Capitata		From terminal leaders.	
3-yr., T, cutback		35.00	300.00	2-yr., T, cutting type		30.00	250.00
4-yr., TT		50.00	450.00	3-yr., T, cutting type		35.00	300.00
5-yr., TT		65.00	600.00				
6-yr., TT		85.00	750.00				
Taxus Intermedia				Taxus Mooni			
5-yr., TT		50.00	450.00	2-yr., T		30.00	250.00
Taxus Hatfieldi				4-yr., TT		45.00	400.00
2-yr., T		30.00	250.00				
3-yr., T		35.00	300.00	Thuja Nigra			
4-yr., TT		40.00	350.00	2-yr., T		30.00	250.00

We cannot fill orders for less than one hundred of a size and variety. 250 liners furnished at the thousand rate.

LEGHORN'S EVERGREEN NURSERIES

GEER STREET

CROMWELL, CONN.

and pistillate flowers on the same tree, some staminate only, and some have all three kinds. There is a tendency, however, for certain branches to bear only one type of flower. When budwood is taken from such branches, the resulting trees will bear only that type of bloom.

Propagation of selected varieties is mainly by budding on thornless rootstocks. In fertile soil a growth of seven or eight feet may be obtained the first year after cutting back to the inserted bud. These 1-year whips, while relatively small in trunk diameter, are perfectly straight-stemmed and suitable for transplanting to their permanent location.

Trees produced from seeds may be variable in form and other characteristics. For street and lawn purposes it seems desirable to plant named varieties of known habit and sex.

Lawn grasses grow well beneath the light shade of honey locust trees. Apparently there is just enough shade to discourage perennial weeds and to cool the ground surface so that grasses thrive better than if exposed to full sun. Experiments at the Ohio station, with pasture grasses growing beneath black walnuts and black locusts, have shown not only increased growth, but also a higher nutrient content as compared to simi-

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BLIGHT-RESISTANT

Hemming strain of trees raised only from our heavy-bearing parent trees.

	Per 10	Per 100	Per 1000
18 to 24 ins.	\$ 3.50	\$32.50	\$300.00
2 to 3 ft.	6.00	55.00	500.00
3 to 4 ft.	8.00	70.00	650.00
4 to 5 ft.	10.00	90.00	750.00

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MUSSER FORESTS, Inc. INDIANA, PENNA.

EVERGREEN LINERS

This year we have some really nice liners in small evergreens growing here in our nursery. All evergreen liners are nice, well rooted, 1 and 2-year stock. They will be shipped bare root. All evergreens are grown under irrigation. Our supply is limited, so send your order now.

Arborvitae, Chinese Compacta

Here is some very nice seedling stock that is used for potting and grafting other evergreens on their roots as well as for growing them into finished evergreens.

	Per 10	Per 100	Per 1000
3 to 6 ins., sdigs.	\$0.50	\$ 3.00	\$ 25.00
6 to 8 ins., sdigs.	.60	4.00	35.00
8 to 12 ins., sdigs.	.75	5.00	45.00

Juniperus Hibernica, Irish Juniper (Upright Juniper)

These are nice one-year field-grown liners.

4 to 6 ins., L.O., field-grown	1.50	10.00	
6 to 8 ins., L.O., field-grown	2.00	15.00	
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Juniperus Virginiana, Red Cedar

Used mostly as understock for grafting but often planted as a specimen evergreen.

4 to 6 ins., transplanted	.50	4.00	30.00
6 to 12 ins., transplanted	.65	5.00	40.00
12 to 15 ins., transplanted	.75	6.00	50.00
Special grafting size, 1/4-in. and up	.75	6.00	50.00

Tsuga Canadensis, Canadian Hemlock

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3 to 6 ins., transplants	2.00	15.00	125.00
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8 to 12 ins., transplants	3.00	25.00	225.00
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Viburnum dentatum, understocks.

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Myrica cerifera, 2-yr. transplants, 3 to 6 ins.

Write for samples and prices.

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NEW LONDON, CONN.

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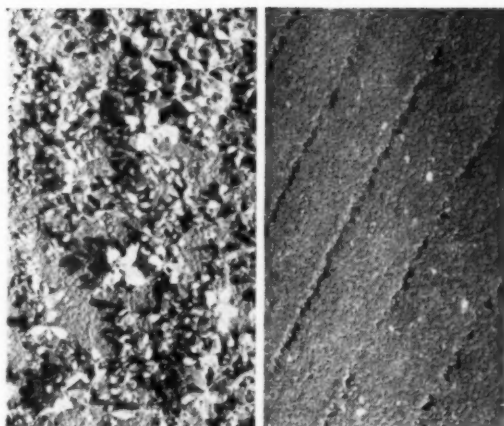
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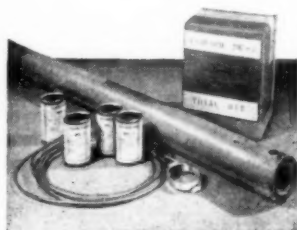
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Dowfume MC-2 makes the difference! At the right, violas flourish in soil treated with Dowfume MC-2 before planting. There's no weed problem here—no damage from root-attacking parasites. At the left, planting was done in untreated soil at the same time.



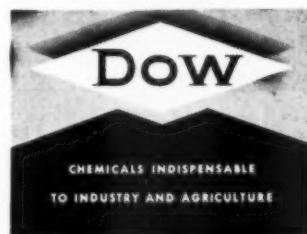
Dowfume MC-2 kills most of the weed seeds present in the soil—also controls soil insects. At higher dosages, it controls many plant diseases. This new Methyl Bromide-Chloropicrin mixture is easy to apply—does a thorough job throughout the tilled layer of soil—aerates rapidly.



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Several selections of aberrant types have been made within the species, four of which are listed as varieties in Rehder's Manual. Of these *Gleditsia triacanthos inermis* is thornless in all its growth phases and of more

LINING-OUT STOCK

	Per 100	Per 1000
Cornus florida, 1-yr. sdgls., 10 to 18 ins.	\$ 5.00	\$ 30.00
Cotoneaster divaricata, 1-yr. sdgls., 6 to 12 ins.	10.00	75.00
Daphne mezereum, 2-yr. sdgls., 4 to 6 ins.	12.00	...
Daphne mezereum album, 2-yr. sdgls., 6 to 10 ins.	12.00	...
Euonymus vegetus, 1-yr. tr., 4 to 8 ins.	12.50	100.00
Euonymus vegetus, 1-yr. tr., 6 to 10 ins.	17.50	150.00
Forsythia Spring Glory, new, 1-yr. tr., 12 to 18 ins.	16.00	150.00
Japanese Maple, red and green, mixed, 1-yr. sdgls.	8.00	60.00
Juniperus meyeri, 1-yr. tr., 5 to 8 ins.	30.00	250.00
Juniperus stricta (Greek), 2-yr. tr., 8 to 10 ins.	50.00	450.00
Lilac, Belle de Nancy, 2-yr. grafts, 15 to 24 ins.	40.00	...
Lilac, Charles Joly, 2-yr. grafts, 15 to 24 ins.	40.00	...
Lilac, Lucie Baltet, 2-yr. grafts, 15 to 24 ins.	40.00	...
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Magnolia soulangeana, 1-yr. tr., cuttings.	50.00	...
Magnolia soulangeana, 2-yr. tr., cuttings, 12 to 18 ins.	75.00	...
Spruce, Koster's Blue, 1-yr. grafts.	100.00	...
Taxus brevifolia, 2-yr. tr., 6 to 9 ins.	30.00	250.00
Taxus capitata (from Jap. Seed), 7-yr., twice tr., 12 to 15 ins.	125.00	1000.00
Taxus cuspidata (spreading), 2-yr. tr.	25.00	200.00
Taxus cuspidata (spreading), 4-yr., twice tr.	55.00	500.00
Taxus hatfieldi, 3-yr. tr., 12 to 18 ins.	35.00	300.00
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3 to 6 ins., sdigs.	\$0.50	\$ 3.00	\$ 25.00
6 to 8 ins., sdigs.	.60	4.00	35.00
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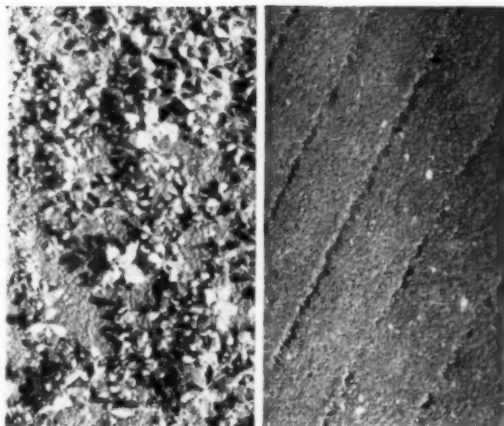
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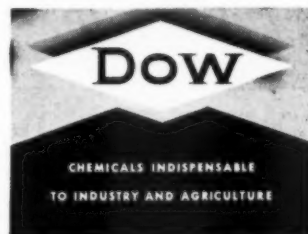
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Ash, American White, 6 to 8 ft.	\$ 2.00	\$17.50
Ash, American White, 8 to 10 ft.	2.75	25.00
Elm, American, 6 to 8 ft.	1.50	14.00
Elm, American, 8 to 10 ft.	2.25	21.50
Elm, American, 10 to 12 ft.	2.65	25.00
Flowering Cherry, Mt. Fuji and Yoshino, 2 to 2½ ins. cal., BR	7.50	65.00
Flowering Cherry, Mt. Fuji and Yoshino, 2½ to 3 ins. cal., B&B	15.00	
Flowering Cherry, single weeping, 5-ft. stems, 2-yr. heads	6.50	60.00
Flowering Crab, Eleyi, 4 to 6 ft.	.90	8.50
Flowering Crab, Eleyi, 6 to 7 ft.	1.35	12.50
Hackberry, 5 to 6 ft.	1.75	16.00
Hackberry, 6 to 8 ft.	2.25	21.50
Hackberry, 8 to 10 ft.	3.00	27.50
Linden, American, 6 to 8 ft.	2.25	21.50
Linden, American, 8 to 10 ft.	3.00	27.50
Linden, American, 10 to 12 ft.	3.75	35.00
Maple, Silver, 6 to 8 ft.	1.50	14.00
Maple, Silver, 8 to 10 ft.	1.75	16.00
Maple, Silver, 10 to 12 ft.	2.25	21.50
Maple, Silver, 2 to 2½ ins. cal.	4.50	42.50
Oak, Red and White, 6 to 8 ft.	2.65	25.00
Oak, Red and White, 8 to 10 ft.	3.65	35.00
Poplar, Bolleana, 5 to 6 ft.	1.00	9.00
Poplar, Bolleana, 6 to 8 ft.	1.35	12.50
Poplar, Lombardy, 6 to 8 ft.	...	6.00
Poplar, Lombardy, 8 to 10 ft.	...	7.50
Poplar, Lombardy, 10 to 12 ft.	...	12.00
Prunus pissardi, 5 to 6 ft.	1.75	16.00
Prunus pissardi, 6 to 8 ft.	...	7.50
Redbud (Cercis canadensis), 3 to 4 ft.	...	6.50
Redbud (Cercis canadensis), 4 to 6 ft.	1.00	9.00
Redbud (Cercis canadensis), 6 to 8 ft.	1.75	16.00

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WAYNESBORO, VIRGINIA

CHINESE ELM

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	Per 10	Per 100
5 to 6 feet...	\$ 6.00	\$50.00
6 to 8 feet...	8.00	70.00
8 to 10 feet...	10.00	90.00

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P. O. BOX 128

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slender habit than the type. The thornless characteristic is not perpetuated by seeds. Some thorned seedlings will be produced from every lot of seeds from thornless trees. The greatest number of thornless seedlings on record from any single lot of seeds is ninety three per cent, and the average is between forty and sixty per cent.

Gleditsia triacanthos elegantissima is a thornless, dense, bushy form sometimes used for hedge purposes. Gleditsia triacanthos bujoti is a near weeping form with pendulous branches. Gleditsia triacanthos nana is a rather dwarf and compact type.

In addition to the above varieties, there are three selected clones which have all been produced by vegetative propagation from selected individual trees. The clonal selections Calhoun and Millwood are being grown by the Tennessee Valley Authority soil conservation service and other interested agencies, because of the nutrient content of their pods. These fruits produce as much carbohydrate material per acre as field corn and make excellent cattle feed. In addition, the growth of pasture grasses beneath the trees is markedly benefited by the light shade of the honey locusts.

Another clone has been selected and patented under plant patent 836 by the Siebenthaler Co., Dayton, O. This vegetatively produced variety is both thornless and staminate so that it never produces any of the long, twisted pods which are considered objectionable in a street tree. The original selection is now about 30 years old and has definitely assumed a vase-shaped form of growth. Even the lower branches are somewhat ascending. This variety will apparently never need the biennial pruning of lower branches which presents such a problem in maintenance with many of our common street trees. At the present time, this selection approaches closely to the ideal of the perfect shade and lawn tree. It possesses all the good qualities of the average honey locust, and, in addition to being both thornless and seedless, it has excellent structure and form.

With a species showing such individual variation as is exhibited by the honey locust, it should be possible to choose a number of types and forms to fit specific site conditions. There is a definite need for a strong, rangy central leader type for roadside planting as well as for a dwarf form with a mimosa-like crown. Perhaps even a fastigate form may be found. Keen and continued observation on the part of plantsmen everywhere will be

GRAFTED STOCK

For Spring, 1950, Delivery

	Per 10	Per 100		Per 10	Per 100
<i>Acer palmatum atropurpureum</i>	\$7.00	\$65.00	<i>Magnolia soulangeana nigra</i>	\$6.50	\$60.00
<i>Acer palmatum dissectum atropurpureum</i>	7.00	65.00	<i>Magnolia stellata</i>	6.50	60.00
<i>Cornus florida alba plena</i>	5.00	45.00	<i>Magnolia stellata rubra</i>	7.00	65.00
<i>Cornus florida rubra</i>	5.00	45.00	<i>Magnolia stellata, Water Lily</i>	6.50	60.00
<i>Cornus florida rubra Prosser</i>	7.00	65.00	<i>Magnolia rustica rubra</i>	7.00	65.00
<i>Fagus sylvatica riversi</i>	7.00	65.00	<i>Thuja occidentalis douglasii (spiralis)</i>	4.50	40.00
<i>Ilex opaca femina</i>	5.00	45.00	<i>Thuja occidentalis elegantissima</i>	4.50	40.00
<i>Juniperus chinensis columnaris glauca</i>	5.00	45.00	<i>Thuja occidentalis lutea, Mary Corey</i>	4.50	40.00
<i>Juniperus chinensis columnaris viridis</i>	5.00	45.00	<i>Thuja occidentalis lutea, George Peabody</i>	4.50	40.00
<i>Juniperus chinensis keteleeri</i>	5.00	45.00	<i>Thuja occidentalis nigra</i>	4.50	40.00
<i>Juniperus chinensis neoboriensis</i>	5.00	45.00	<i>Thuja occidentalis pyramidalis</i>	4.50	40.00
<i>Juniperus chinensis sargentii</i>	5.00	45.00	<i>Thuja occidentalis rosenthalii</i>	4.50	40.00
<i>Juniperus chinensis sargentii glauca</i>	5.00	45.00	<i>Thuja occidentalis wareana (sibirica)</i>	4.50	40.00
<i>Juniperus chinensis meyeri</i>	5.00	45.00	<i>Thuja orientalis aurea nana</i>	4.00	35.00
<i>Juniperus virginiana burki</i>	5.00	45.00	<i>Thuja orientalis conspicua</i>	4.00	35.00
<i>Juniperus virginiana canaerti</i>	5.00	45.00	<i>Thuja orientalis elegantissima</i>	4.00	35.00
<i>Juniperus virginiana elegantissima</i>	5.00	45.00	<i>Tsuga canadensis pendula</i>	5.50	50.00
<i>Juniperus virginiana glauca</i>	5.00	45.00	<i>Tsuga canadensis pendula, 1-yr. grafts</i>	7.00	65.00
<i>Juniperus virginiana globosa</i>	5.00	45.00			
<i>Juniperus virginiana kostermaniana</i>	5.00	45.00			
<i>Juniperus virginiana schottii</i>	5.00	45.00			
<i>Juniperus virginiana pyramidaformis hillii</i>	5.00	45.00			
<i>Juniperus sabina Von Ehron</i>	5.00	45.00			
<i>Magnolia lennei</i>	7.00	65.00			
<i>Magnolia soulangeana</i>	6.50	60.00			

All the above shipped from 2 1/4-inch rose pots.

Special for Fall Shipment

<i>Magnolia soulangeana, 1-yr. grafts</i>	\$75.00 per 100
<i>Magnolia soulangeana nigra, 1-yr. grafts</i>	\$75.00 per 100

Prices are F.O.B. Mountain View, N. J., packing additional at cost. Usual terms to those of established credit. No goods sent C.O.D. unless 25 per cent of amount is sent with order. All this material is listed subject to prior sale and crop conditions.

HESS' NURSERIES

MOUNTAIN VIEW, N. J.

necessary if such trees are brought to public attention. It is even possible that certain clonal rootstocks or interstocks may be discovered which will modify the size and form of the budded variety. Surely the honey locust species offers a rare opportunity for developing trees to fit specific needs and requirements.

FOUNDATION PLANTINGS.

[Concluded from page 10.]

garage. If trees are to be used, the tallest trees are more effective on the lawn area near the garage, with a smaller tree on the other side (see illustration C on page 10).

Repeat the planting of the same species, and do not use too much variety. If mountain laurel is a part of the foundation planting, include it in other plantings on the property. This practice tends to create a more harmonious picture and a feeling that all the plantings are a part of the same home.

OTTO STAUB, Staub Nursery & Poultry Farm, Chenango Forks, N. Y., whose firm has sold nursery stock for a number of years, now plans to grow stock on his forty acres.

EVERGREENS

Northern-grown

	Canadian Hemlock	American Arborvitae	Balsam Fir
	Per 100	Per 1000	
2 to 4 ins., sdgs.....	\$0.80	\$ 5.00	
3 to 6 ins., sdgs.....	1.50	10.00	
6 to 9 ins., sdgs.....	2.50	15.00	
9 to 12 ins.....	6.00	40.00	
12 to 18 ins.....	8.00	65.00	

Freshly collected. Well rooted. Puddled and packed in sphagnum moss. Catalog of plants, ferns, etc., on request.

WILLIAM CROSBY HORSFORD
CHARLOTTE, VERMONT

LINERS

Ask for list.

BROUWER'S NURSERIES
Box 25 NEW LONDON, CONN.

BURR

Leading wholesale source for
Nursery Stock

Send us your Want List.
C. R. BURR & CO., INC.
Manchester, Conn.

NORTHERN-GROWN LINING-OUT STOCK

	Per 100	Per 1000
<i>Betula papyrifera</i>	\$6.00	\$50.00
1 to 2 ft.....	8.00	70.00
<i>Clethra alnifolia</i>	5.00	45.00
6 to 18 ins.....	5.00	40.00
<i>Ilex verticillata</i>	6.00	50.00
1 to 2 ft.....	6.00	50.00
<i>Syringa vulgaris</i>	6.00	50.00
1 to 2 ft.....	6.00	50.00
<i>Viburnum cassinoides</i>	6.00	50.00
1 to 2 ft.....	6.00	50.00
<i>Viburnum lentago</i>	6.00	50.00
1 to 2 ft.....	6.00	50.00

EVERGREENS

<i>Thuja occidentalis</i>	5.00	40.00
6 to 12 ins.....	4.00	25.00
<i>Tsuga canadensis</i>	5.00	40.00
4 to 8 ins.....	5.00	40.00

The above stock is first-quality collected lining-out stock. Send for complete list of Hardy Native Trees, Lilies, Orchids, Wild Flowers, Ferns, Shrubs and Evergreens.

ISAAC LANGLEY WILLIAMS
P.O. Box 352 Exeter, New Hampshire

POTTED LINERS

GRAFTS

(Beetle Certified)

HEASLEY'S NURSERIES
Freeport Rd. BUTLER, PA.

PRIVET and BERBERIS

Splendid Stock

Write for Special Quotations

LESTER C. LOVETT
MILFORD DELAWARE

PLUMFIELD NURSERIES

BOX 7

L. A. Moffet, Mgr.

FREMONT, NEB.

TERMS AND CONDITIONS OF SALE

TERMS—One per cent discount for cash if paid on or before 10th of month following date of invoice, and is due NET 30 days thereafter. Interest charged on past due accounts.

These terms are offered to those with established credit; otherwise cash, security, or satisfactory references. **C.O.D. orders must be accompanied by one-fourth cash.**

PRICES in this list are based upon present market conditions and are subject to change without notice. These are Wholesale Prices and apply upon the following quantities:

		Per 100	Per 1000			Per 100	Per 1000
Ash, Green.				Locust, Black.			
15,000	18 to 24 ins.	\$ 2.50	\$ 22.00	8000	3 to 4 ft.	\$ 4.50	\$ 40.00
70,000	12 to 18 ins.	1.80	15.00	20,000	2 to 3 ft.	2.90	25.00
200,000	6 to 12 ins.	1.20	10.00	Mulberry, Russian.			
Buckthorn, Dahurian.				6000	2 to 3 ft.	4.00	35.00
300	2 to 3 ft.	7.50	65.00	50,000	18 to 24 ins.	2.90	25.00
12,000	6 to 12 ins.	3.00	25.00	30,000	12 to 18 ins.	1.90	16.00
Buffaloberry.				30,000	6 to 12 ins.	1.20	10.00
8000	6 to 12 ins.	2.50	20.00	Pin Oak.			
Caragana.				4000	3 to 4 ft.	18.00	150.00
1000	2 to 3 ft.	6.00	55.00	6000	2 to 3 ft.	12.00	100.00
5000	18 to 24 ins.	4.50	40.00	3000	18 to 24 ins.	9.00	80.00
12,000	12 to 18 ins.	3.20	28.00	Poplar, Lombardy, L-yr.			
20,000	6 to 12 ins.	2.10	18.00	1600	5 to 6 ft.	14.00	120.00
Cydonia Japonica				1000	4 to 5 ft.	10.00	90.00
100	12 to 18 ins.	3.50	30.00	500	3 to 4 ft.	8.50	75.00
3500	6 to 12 ins.	2.50	20.00	100	2 to 3 ft.	5.60	50.00
Elm, Chinese.				Redbud.			
20,000	2 to 3 ft.	3.50	30.00	Nebraska-grown, Nebraska seeds.			
160,000	18 to 24 ins.	2.40	20.00	3000	12 to 18 ins.	7.50	70.00
100,000	12 to 18 ins.	1.70	14.00	10,000	6 to 12 ins.	5.00	40.00
2,000,000	6 to 12 ins.	.80	7.00	Sand Cherry.			
Honeysuckle.				8000	2 to 3 ft.	10.00	90.00
100,000	6 to 12 ins.	2.50	20.00	30,000	18 to 24 ins.	8.00	70.00
Honey Locust, Thornless.				40,000	12 to 18 ins.	5.50	50.00
2000	2 to 3 ft.	3.50	30.00	15,000	6 to 12 ins.	4.00	35.00
5000	18 to 24 ins.	2.60	22.00	Rosa Multiflora.			
30,000	12 to 18 ins.	1.80	15.00	Grown from western seeds.			
80,000	6 to 12 ins.	1.40	12.00	100,000	8 to 15 ins.		

Write for special quotations on large quantities.

ORNAMENTAL EVERGREENS

Trees & Shrubs

BAGATELLE NURSERY
P. O. Huntington Station, N. Y.

HEMLOCK

Rhododendron — Kalmia Azalea

CURTIS NURSERIES
CALICOON, N. Y.

SHEPARD NURSERIES

Growers and Distributors of
ORNAMENTAL NURSERY STOCK

Truckloads only, no boxing.
60 acres growing. Skaneateles, N. Y.

We Offer—

EVERGREENS—In a large assortment of **PYRAMIDAL** and **GLOBE ARBORVITAE**, **PFITZER JUNIPER** and **YEW**s in grades at attractive prices. **SOME LARGE SPECIMEN EVERGREENS, SHRUBBERY and SHADE TREES.**

Mail want list for prices.

THE WESTMINSTER NURSERIES
Westminster, Md.

LINING-OUT STOCK

If you have not received a copy of our Fall, 1949, price list and are interested, send for same.

THOMAS B. MEEHAN CO., Inc.
Dresher, Pa.

PRINCETON NURSERIES

Headquarters for Quality

Ornamental Stock

Send us your want list.

PRINCETON NURSERIES

Princeton, New Jersey
Phone: Princeton 1776



NATIONAL PLANT BOARD VOTES RECOMMENDATIONS.

The National Plant Board, composed of representatives of the regional boards representing state inspection and regulatory officials, met at Chicago October 17 and 18, concluding its sessions of detailed discussions by voting the following recommendations, summarized by R. P. White, executive secretary of the American Association of Nurserymen, who attended the meeting:

Request the federal bureau of entomology and plant quarantine to study the plant quarantine act of 1912 carefully and determine amendments needed to strengthen the law, and to present these in conference to the board.

Support amendments which would exclude importation of plant disease organisms, virus, soils, snails and garbage as possible pest risks to agriculture.

Oppose any relaxation in customs inspection as proposed by the McKenzie report, which recommended that customs look at only ten per cent of the incoming baggage. Records indicate that ninety per cent of the dangerous plant pest interceptions would be missed by such a procedure.

Approve a statement calling for more cooperative handling of root-knot nematode on nursery stock in interstate commerce and indicate that this pest should not be handled by embargo action by any state.

Recommend to the states that expiration dates on state certificate shipping tags be eliminated when such action can be taken under state laws.

Favor an amendment to the barberry quarantine to permit interstate movement of seeds of resistant varieties of barberry from outside the nineteen eradication states to these states under proper safeguards.

It was reported at the meeting that since January 1, 1949, 381 shipments of plants required to be grown under postentry quarantine had been imported, constituting 254,833 units of plant material. These went to thirty-eight states, with New York, New Jersey, Pennsylvania, Massachusetts and Connecticut getting over half of the total. Examination of the figures indicated that 52,000 of these units of plant material were hop sets going to Oregon and Washington, and 151,000 units of rose species exclusive of numerous small importations of new varieties. The remaining 51,000 plants covered a wide variety of genera, usually in small numbers.

KRIEGER'S WHOLESALE NURSERY

BRIDGMAN, MICHIGAN

Telephone 22

SMALL FRUITS

These prices cancel all previous lists and are subject to change without notice, 250 or over at 1000 rate. Boxing at cost. All prices F.O.B. Bridgman, Usual terms.

GRAPES		Per 100	Per 1000
Concord, 2-1	.....	\$10.00	\$ 80.00
Concord, 1-1	.....	8.00	80.00
Niagara, 2-1	.....	11.00	90.00
Niagara, 1-1	.....	9.00	70.00
Catawba, 2-1	.....	11.00	90.00
Catawba, 1-1	.....	9.00	70.00
Fredonia, 2-1	.....	11.00	90.00
Fredonia, 1-1	.....	9.00	70.00
Delaware, 2-1	.....	14.00	120.00
Delaware, 1-1	.....	11.00	90.00
Van Buren, 2-1	.....	26.00	.....
Van Buren, 1-1	.....	16.00	.....
Sheridan, 1-1	.....	14.00	.....
BLACKBERRIES			
Eldorado, transplants	.....	6.50	55.00
Eldorado, No. 1, f.c.	.....	5.00	40.00
Alfred, transplants	.....	6.50	55.00
Alfred, No. 1, f.c.	.....	5.00	40.00
Early Harvest, No. 1, f.c.	.....	5.00	40.00
BOYSENBERRIES and DEWBERRIES			
Boysenberry (Common), No. 1 tips	.....	5.00	40.00
Boysenberry (Thornless), No. 1 tips	.....	5.50	45.00
Lucretia Dewberry, No. 1 tips	.....	5.50	40.00
CURRANTS			
Wildier, 3-yr. heavy	.....	15.00	130.00
Wildier, 2-yr. No. 1	.....	12.00	100.00
Wildier, 1-yr. No. 1	.....	7.00	60.00
Red Lake, 2-yr. No. 1	.....	16.00	.....
Red Lake, 1-yr. No. 1	.....	12.00	.....
GOOSEBERRIES			
Downing, 2-yr. No. 1	.....	25.00	.....
Houghton, 2-yr. No. 1	.....	25.00	.....
Champion, 2-yr. No. 1	.....	25.00	.....

BLUEBERRIES

Prices of Rancocas, Rubel, Jersey		Each	Per 10	Per 100	Per 1000
2-yr., 9 to 12 ins., bearing age	.....	\$0.40	\$3.50	\$32.50	\$300.00
3-yr., 12 to 18 ins., bearing age	.....	.55	5.00	47.50	450.00
4-yr., 18 to 24 ins., bearing age	.....	.75	7.00	67.50	650.00

Write for Special Quotations on Quantity Lots.

RED RASPBERRIES		Per 100	Per 1000
Latham, transplants	.....	\$ 7.50	\$ 62.50
Latham, 1-yr. No. 1	.....	6.00	47.50
Chief, transplants	.....	7.00	60.00
Chief, 1-yr. No. 1	.....	5.50	45.00
Sunrise, transplants	.....	7.00	60.00
Sunrise, 1-yr. No. 1	.....	5.50	45.00
Indian Summer, transplants	.....	8.00	70.00
Indian Summer, 1-yr. No. 1	.....	6.50	55.00
St. Regis, transplants	.....	7.00	60.00
St. Regis, 1-yr. No. 1	.....	5.50	45.00
BLACK RASPBERRIES			
Cumberland, trans. No. 1	.....	8.00	70.00
Cumberland, trans. No. 2	.....	6.50	55.00
Cumberland, tips, No. 1	.....	4.50	35.00
Logan, trans. No. 1	.....	8.00	70.00
Logan, trans. No. 2	.....	6.50	55.00
Logan, tips, No. 1	.....	4.50	35.00
Morrison, trans. No. 1	.....	9.00	80.00
Morrison, trans. No. 2	.....	7.50	65.00
Morrison, tips, No. 1	.....	5.00	40.00
PURPLE RASPBERRIES			
Sodus, No. 1, tips	.....	5.50	45.00
ASPARAGUS			
Paradise and Washington	.....	
3-yr. heavy	.....	4.00	30.00
2-yr. No. 1	.....	2.30	18.00
1-yr. No. 1	.....	1.70	12.00
1-yr., in 10,000 lots	.....		10.00
VICTORIA RHUBARB			
Whole Roots	.....	
1½-in. and up	.....	8.00	75.00
1 to 1½-in.	.....	5.50	50.00
¾ to 1-in.	.....	4.00	35.00
½ to ¾-in.	.....	3.00	25.00
RED RHUBARB			
Canada Red, No. 1 divisions	.....	40.00	350.00
McDonald, No. 1 divisions	.....	30.00	250.00
HORSE-RADISH			
Cuttings, 4 to 5 ins.	.....	2.00	15.00
Whole Roots	.....	4.50	35.00

BOSTON HARVEST SHOW.

The Boston harvest show, which built its central motif around the centennial of the Concord grape, was held at Horticultural Hall, Boston, from October 13 to 15.

Grapes dominated the decoration of the main exhibition hall where the New York agricultural experiment station, Geneva, won a silver medal for a collection of seedling grapes. The New York station also received an award of merit for seedling prune No. 827 and votes of commendation for actinidia, native persimmons and seedling crab apples.

A chrysanthemum courtyard, created by the Bay State Nurseries, Inc., North Abington, Mass., dominated the stage of the lecture hall and won a special prize. The latest varieties of chrysanthemums were arranged by John Russell in a clever display across the entire back wall of the lecture hall and won a gold medal for Breck's, Inc., Boston.

RECENTLY incorporated at San Lorenzo, Calif., was the Twin Nurseries Co.

THE B & G Nursery, 1214 South Kansas avenue, Newton, Kan., is now under new ownership. James M. Helfer is one of the new partners.

QUALITY MERCHANDISE AT REASONABLE PRICES

C. L. VANDERBROOK & SON
MANCHESTER, CONN.

Wholesale Nurserymen Since 1922

TAXUS BREVIFOLIA

Finished stock. Come and see it.
In lots of 25 to 100. For cash.

	Each
15 to 18 ins., B&B.	\$3.50
18 to 24 ins., B&B.	4.50

No shipping. Send your truck.

HUEBNER'S NURSERY
MONROE, N. Y.

Route 17 Orange County

WANTED

10,000 Blue Spruce
Bushy, well branched, 8 to 10 or 10 to 12 ins., transplants. Good color.
Wire or phone.

MUSSER FORESTS, Inc. INDIANA, PENNA.

KOSTER NURSERY

Division of Seabrook Farms

Wholesale Nurserymen

BRIDGETON, N. J.

Specializing in the propagation of grafted lining-out stock of all kinds. Write for our new list of lining-out stock.

ACER PLATANOIDES • NORWAY MAPLES

	Per 100
6 to 8 ft., ¾ to 1 -in. cal.	\$ 60.00
8 to 10 ft., 1 to 1½-in. cal.	75.00
9 to 11 ft., 1½ to 2-in. cal.	150.00
10 to 12 ft., 2 to 2½-in. cal.	200.00
11 to 13 ft., 2½ to 3-in. cal.	225.00

All these trees are well branched with fine fibrous roots and have been twice transplanted.

Additional charge of 10 per cent will be added for baling. No charge for loading trucks here at the nursery.

When C.O.D. shipment is desired, a cash deposit of 25 per cent must accompany order.
Orders for less than 100 of a size will be invoiced at an ADVANCE of 25 per cent OVER THE HUNDRED RATE.

STATE ROAD NURSERY

State and Sprout Rds. Media, Pa.
Route 1

CHINESE CHESTNUT TREES

Blight-resistant.
TREES—TRANSPLANTS—LINERS

THE GOLD CHESTNUT NURSERY
Cowen, W. Va.

Coming Events

MEETING CALENDAR.

For the benefit of state association officers who wish to set the time of midwinter meetings with a minimum of conflict, the following list is given of convention dates already made known. Secretaries of other associations are invited to notify the editor of further meeting dates as soon as they are set.

November 17 and 18, Holly Society of America, New Jersey agricultural experiment station, New Brunswick.

December 5 and 6, Minnesota State Nurserymen's Association, Inc., Lowry hotel, St. Paul.

December 7, Western Pennsylvania Nurserymen's Association, Webster Hall hotel, Pittsburgh.

December 7 and 8, Wisconsin Nurserymen's Association, Schroeder hotel, Milwaukee.

December 8, Long Island Nurserymen's Association, La Grange hotel, Babylon, N. Y.

January 3 to 6, Indiana Association of Nurserymen, Union Memorial building, Purdue University, West Lafayette.

January 4 to 6, A. A. N. Eastern Regional Meeting, Hotel Statler, New York.

January 5, New Jersey Association of Nurserymen, Hotel Statler, New York.

January 5, New York State Nurserymen's Association, Hotel Statler, New York.

January 10 and 11, Oklahoma State Nurserymen's Association, Biltmore hotel, Oklahoma City.

January 11, Kansas Nurserymen's Association, Hotel Muehlebach, Kansas City, Mo.

January 11 and 12, Western Association of Nurserymen, Hotel Muehlebach, Kansas City, Mo.

January 12, Connecticut Nurserymen's Association, Waverly Inn, Cheshire.

January 13 and 14, Iowa Nurserymen's Association, Hotel Kirkwood, Des Moines.

January 15 to 17, Executive Committee, American Association of Nurserymen, Hotel La Salle, Chicago.

January 16, National Landscape Nurserymen's Association, Hotel La Salle, Chicago.

January 16, National Mail Order Nurserymen's Association, Hotel La Salle, Chicago.

January 16, All-America Rose Selections, Inc., Hotel La Salle, Chicago.

January 17 to 19, Illinois State Nurserymen's Association, Hotel La Salle, Chicago.

January 23 to 25, Short Course for Nurserymen, Landscape Gardeners and Arborists, Neil House, Columbus, O.

January 25, New Jersey Association of Nurserymen, Hotel Hildebrecht, Trenton.

January 26 and 27, Ohio Nurserymen's Association, Neil House, Columbus.

January 29 to 31, Virginia Nurserymen's Association, Hotel John Marshall, Richmond.

February 1 to 3, Michigan Association of Nurserymen, Fort Shelby hotel, Detroit.

February 7 to 9, New England Nurserymen's Association and Massachusetts Nurserymen's Association, Hotel Kenmore, Boston.

February 15, Rhode Island Nurserymen's Association, Newport.

February 15 to 19, Midwestern Chapter of National Shade Tree Conference, Hotel La Salle, Chicago.

HOLLY SOCIETY TO MEET.

The Holly Society of America will meet at the New Jersey agricultural experiment station, New Brunswick, November 17 and 18, according to Harry W. Dengler, vice-president.

LONG ISLAND MEETING.

The La Grange hotel, Babylon, N. Y., has been chosen for the annual meeting of the Long Island Nurserymen's Association, December 8, according to David R. Bulk, secretary.

RHODE ISLAND DATE.

February 15 is the date set for the annual meeting of the Rhode Island Nurserymen's Association at Newport, Secretary J. C. Brownell has announced.

INDIANA DATES SET.

J. C. Bunch, president of the Indiana Association of Nurserymen, announces that the association's winter meeting will be held January 3

to 6 on the campus of Purdue University, Lafayette, in the Union Memorial building.

NEW JERSEY DATES.

For its annual winter meeting the New Jersey Association of Nurserymen will meet twice in January, Secretary R. P. Korbobo, has announced. The first meeting will be the morning of January 5 at the Hotel Statler, New York, during the convention of the eastern regional nurserymen. The second will be an all-day session January 25 at the Hotel Hildebrecht, Trenton, N. J.

VIRGINIA SETS DATES.

The winter meeting of the Virginia Nurserymen's Association will be held at Hotel John Marshall, Richmond, January 29 to 31, according to A. S. Gresham, Jr., secretary-treasurer.

MINNESOTA PROGRAM.

The program for the twenty-fourth annual meeting of the Minnesota State Nurserymen's Association was announced recently by R. N. Ruedlinger, secretary. The meeting will be held December 5 and 6, at the Lowry hotel, St. Paul.

Monday morning will be devoted to registration, and the program will open at luncheon with the president's address, by Ken B. Law, followed by the treasurer's report by Harold Reid and the appointment of committees. Guest speaker for the afternoon will be the Hon. August Andre-

CHICAGO IN JANUARY

Are you planning on being in Chicago for the meetings in January? Then make your reservations at the Hotel La Salle NOW! Indications now are that our 1950 Convention will again be the "Largest Ever."

While we do not anticipate as much interference from other conventions as we had to meet last year, hotel men advise us that the room situation in Chicago's loop hotels will still be tight all through the month of January, and early reservations will be necessary. Write now to the Hotel La Salle, La Salle at Madison, Chicago 2, Illinois, for your reservations!

Meeting Dates:

ILLINOIS STATE NURSERYMEN'S ASSOCIATION, ANNUAL CONVENTION
January 17-18-19, 1950.

AMERICAN ASSOCIATION OF NURSERYMEN, EXECUTIVE COMMITTEE
January 15-16-17, 1950.

NATIONAL LANDSCAPE NURSERYMEN'S ASSOCIATION
January 16, 1950.

Closed meetings of a number of national allied nurserymen's associations will also be held over the week-end.

ILLINOIS STATE NURSERYMEN'S ASSOCIATION

sen, congressman from the first district of Minnesota, who will speak on "The American System vs. Socialism"; Harold Parnham, Robinson & Parnham, Des Moines, Ia., who will talk on "Doing More for the Customer," and Dr. Leon Snyder, extension horticulturist, University of Minnesota, who will speak on "Hardiness of Nursery Stock."

Vernie Johnson, Walter Niehaus and Gordon Bailey have arranged a banquet for 6 o'clock, at which Milton Boock, principal of the Lake City high school, will be toastmaster.

Representing the American Association of Nurserymen, Wayne Ferris, Hampton, Ia., vice-president, will extend greetings to the convention, and Richard P. White, executive secretary, Washington, D. C., will report on "National Affairs Affecting the Nurserymen" when the meeting is resumed Tuesday morning. Prof. T. L. Aamodt, state entomologist, and the legislative committee will also report at this session.

Following a luncheon for the members of the A. A. N., the afternoon program will begin at 1:30 with a talk by A. G. Mereness, public relations director, Minnesota farm bureau, and end with a talk on "Minnesota Fruits," by Prof. W. H. Alderman, chief of the division of horticulture, University of Minnesota.

EASTERN REGION MEETING SCHEDULE.

Participating organizations in the 1950 convention of eastern nurserymen which will be held January 4 to 6 at the Hotel Statler, New York, are region I of the American Association of Nurserymen, region I of the National Landscape Nurserymen's Association, the New England Nurserymen's Association and the state nurserymen's associations of New York, New Jersey, Connecticut, Pennsylvania and Rhode Island.

The 3-day convention will open Wednesday afternoon, January 4, with a meeting of the board of directors of the New York State Nurserymen's Association at 2 p. m. and an executive meeting of region I of the A. A. N. at 4 p. m.

Thursday morning the New York State Nurserymen's Association will hold a general meeting at 9:30 to which out-of-state nurserymen are invited, and at the same time the New Jersey Association of Nurserymen will meet in another room. The afternoon will be devoted to a meeting of region I of the N. L. N. A. at which Homer Dodge, Landscape

SUGAR MAPLE LINERS (Acer Saccharum)

With deciduous trees in good demand, these maple liners will rapidly grow into money.

	Per 100	Per 1000
2 to 3 ft.....	\$16.00	\$150.00
3 to 4 ft.....	20.00	190.00
4 to 5 ft.....	25.00	235.00
5 to 6 ft.....	35.00	330.00
6 to 8 ft.....	45.00	425.00
8 to 10 ft.....	60.00	575.00

Plant this fall and have the job out of the way.

EVERGREEN NURSERY CO.

Established 1894

STURGEON BAY, WIS.

HEMLOCK and BOXWOOD

Quality Plants. New low prices.

Canadian Hemlock.	Per 100
3 to 4 ft., B&B	\$2.50
4 to 5 ft., B&B	3.25
5 to 6 ft., B&B	4.00

Old English Boxwood.	
18 to 20 ins. high, x, 11 to 12-in. spread, B&B	2.50
24 ins. high, x, 12 to 14-in. spread, B&B	3.25
26 ins. high, x, 16-in. spread, B&B	5.00
26 ins. high, x, 18-in. spread, B&B	6.00

Thousands of Nandinas, Pfizers, Hollies, Japanese Magnolias, Osmanthus, Azaleas, Sugar Maples, etc. Write for prices on large quantities.

BOXWOOD NURSERIES
MOCKSVILLE, N. C.

MAGNOLIA GRANDIFLORA

Evergreen magnolia, heavily branched specimens, 3 times transplanted. Will be dug with a wired ball, 2 1/2 to 4 ft., 80c per ft. (No order for less than 10.) Crating 10 per cent extra.

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Juniperus Hetzi Glauca	Per 100
1000 6 to 8 ins., 3-yr.	\$25.00
3500 8 to 10 ins., 2-yr.	22.50
Juniperus Hor. Pl. (Andorra)	
4000 8 to 10 ins., 2-yr.	20.00
Thuja Occ. Globosa	
2000 6 to 8 ins., 3-yr.	22.50
4000 6 to 8 ins., 2-yr.	20.00
Thuja Occ. Pyramidalis	
2000 6 to 8 ins., 2-yr.	22.50
300 8 to 10 ins., 3-yr.	25.00

POTS—Continued

Taxus Media Hicksi	Per 100
2000 6 to 8 ins., 1-yr.	\$25.00
500 8 to 10 ins., 2-yr.	27.50
Juniperus Chin. Pfitzeriana	
4000 6 to 8 ins., 1-yr.	20.00
Pachysandra Terminalis	
1000 4 to 6 ins., 2-yr.	8.00
Euonymus Vegetus	
2500 4 to 6 ins., 1-yr.	17.00

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PACKING FREE

Orders will be filled in turn as received while our stocks last, subject to conditions beyond our control.

An order for 25 of the same variety and size sold at the 100 rate.

Minimum order, 100 plants.

We would welcome your inspection.

Location is 18 miles west of Chicago on

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4000 6 to 8 ins., 1-yr.	\$20.00
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4000 6 to 8 ins., 1-yr.	22.50
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4000 6 to 8 ins., 2-yr.	25.00
2000 4 to 6 ins., 2-yr.	22.50

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RED BARBERRY FLOWERING CRAB PRIVET

Berberis atropurpurea, Red Barberry.	Per 10	Per 100	Per 1000
15 to 18 ins., 2-yr. transplants	\$3.00	\$25.00	\$200.00
18 to 24 ins., 2-yr. transplants	3.50	30.00	250.00
24 to 30 ins., 2-yr. transplants	4.20	40.00	350.00
Above well finished plants certified and shipped under govt. permit.			
Flowering Crab, Variety: Hopa.			
Crimson buds, opening rose. Attractive fruit.			
4 to 5 ft.	6.00	50.00	
5 to 6 ft.	7.50	60.00	
6 to 7 ft.	9.00	75.00	
Privet, Amur River South.			
18 to 24 ins., transplanted	.90	7.00	
2 to 3 ft., transplanted	1.00	8.00	
Blackberries, Early Harvest.			
No. 1		5.00	45.00

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SARCOXIE

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Forsythia Intermedia, 3 to 4 ft.	Per 100 \$32.50
Honeysuckle, Zabeli, 3 to 4 ft.	32.50
Privet, Iboia, 3 to 4 ft., heavy.	30.00

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Felix Crouse, cherry-red.	Per 100 \$40.00
Mons. Jules Elie, pink.	35.00
Mons. Martin Cahuzac,	
darkest red	40.00
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Karl Rosenfeld, crimson.	40.00

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Deciduous Trees
Shrubs and Roses

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ELAEAGNUS ANGUSTIFOLIA
THE FRANK MILLER JR. NURSERY
ROUTE 1 PHONE 75F23 MANHATTAN, KAN.

Service Co., Framingham, Mass., executive committeeman for the region, will preside.

A general meeting of region I of the A. A. N. will be held Friday morning at 9:30.

Valleau C. Curtis, Curtis Nurseries, Callicoon, N. Y., is general chairman for the convention; Mrs. Marie Engberg, Rosedale Nurseries, Eastview, N. Y., is secretary-treasurer and will be in charge of registration; C. W. M. Hess, Hess' Nurseries, Mountain View, N. J., is chairman of the committee on trade exhibits; Fred J. Noble, Lovett's Nursery, Little Silver, N. J., is chairman of the committee on program advertising; Charles R. Mouquin, Eugene Henri Mouquin, Inc., Glen Head, N. Y., is in charge of the cocktail party, and Howard C. Taylor, Rosedale Nurseries, Eastview, N. Y., is chairman of the publicity committee.

TENNESSEE HORTICULTURAL SOCIETY TO MEET.

The forty-fourth annual convention of the Tennessee State Horticultural Society will be held at the New Southern hotel, Jackson, December 1 and 2. President A. C. Jackson, Paris, will open the meeting, and the first morning's program will include talks on the importance of breeding and maintaining more productive horticultural crops and sweet potato production in Tennessee. Weather permitting, there will be a motor trip to local orchards in the afternoon.

A discussion of "New and Old Peach Varieties" will be given by John T. Bregger, president of the American Pomological Society, Clemson, S. C., to open the second morning's business session, and other talks on peach culture will be given.

Control of diseases of strawberries and raspberries will be discussed in the afternoon.

CAMELLIA SHOW DATES.

William T. Wood, chairman of the exhibits and awards committee of the American Camellia Society, has announced the following schedule of camellia shows for 1950: January 14 and 15, Pensacola, Fla., and Cordele, Ga.; January 21 and 22, Lafayette, Ind.; January 28 and 29, Charleston, S. C.; Cylo, Ga.; Jacksonville, Fla., and Monks Corner, S. C.; February 4 and 5, Waycross, Ga.; Augusta, Ga., and Perry, Ga.; February 11 and 12, Savannah, Ga.; February 15 and 16, Columbia, S. C.; February 18 and 19, Macon, Ga., and Pasadena, Calif.; February 22, Mar-

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FALL or SPRING

PFITZER JUNIPERS

100 18 to 24 ins., B&B.....	Each \$2.50
250 24 to 30 ins., B&B.....	3.50
400 30 to 36 ins., B&B.....	4.25
75 3 to 4 ft., B&B.....	5.00

MAGNOLIA SOULANGEANA

With buds.	
100 2 to 3 ft., B&B.....	3.00
250 3 to 4 ft., B&B.....	4.00
175 4 to 5 ft., B&B.....	5.00

MAGNOLIA SOULANGEANA

NIGRA

With buds.	
40 2 to 3 ft., B&B.....	3.00
60 3 to 4 ft., B&B.....	4.00

PINK-FLOWERING

DOGWOOD

500 3 to 4 ft., B&B.....	3.00
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RED CEDAR

XX transplanted.	
Sheared to columnar shape.	
100 3 to 4 ft., B&B.....	2.00

RETINOSPORA PLUMOSA

100 2 to 3 ft., B&B.....	2.00
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2 1/2-in. bands.....	\$27.50	\$250.00
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EVERGREENS, SHRUB LINERS.

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shallville, Ga., and March 9 and 10, Fayetteville, N. C.

CAMELLIA EXPERTS TO MEET AT LONDON.

The Royal Horticultural Society of Great Britain will hold its conference on camellias and magnolias at London, March 31 and April 1, 1950. A 6-day tour of Cornish gardens will be made preceding the conference, which will be held in conjunction with the society's fortnightly show. The camellia show will include competitive classes for camellias and magnolias and exhibits of these flowers.

Six different speakers will talk at conference meetings, and their subjects will include "Camellias in Cornish Gardens," "Forms of Camellia Japonica," "Propagation of Camellias and Magnolias," "Survey of the Genus Magnolia Together with Michelia and Manglietia," "Chinese Magnolias in Cultivation" and "Camellia Species."

One of the speakers will be Dr. H. Harold Hume, president emeritus of the American Camellia Society. His subject will be "Forms of Camellia Japonica."

The tour will be based from Falmouth, which will be reached from London by train. From Falmouth, bus tours are scheduled to take in various gardens and a flower show at Truro.

For the days of the conference, excursions to gardens in the vicinity of London have been planned, which will include visits to the Royal Horticultural Society's gardens at Wisley and the Royal Botanic Gardens at Kew.

LOUISIANA SCHOLARSHIPS.

A scholarship of \$150 has been established by the board of directors of the nurserymen's division of the Louisiana State Horticultural Society for a student at Southwestern Louisiana Institute, Lafayette, who will work with flowering shrubs adapted for production in that area.

A resolution to petition the state legislature for funds to expand the work in ornamental horticulture at the institute was also passed by the nurserymen.

A scholarship for \$350 was also presented for work in ornamental and floricultural research by the Federated Garden Clubs of Louisiana.

IN OCTOBER C. B. Lehmer established Lehmer's Nursery, a 6-acre retail business at 301 Fox street, Harrisburg, Pa.

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Early Richmond.			
2-yr.-old.	Per	Per	
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4 1/2 ft.	65.00		
7/16 to 9/16-in., 4 ft.	55.00		
1-yr.-old.			
9/16 to 1 1/16-in.,			
3 ft.	60.00		
7/16 to 9/16-in., 3 ft.	45.00		
5/16 to 7/16-in.,			
2 1/2 ft.	30.00		
CHINESE ELM, seedlings,			
2-yr.-old.			
9 to 12 ins.	\$ 6.50		
12 to 18 ins.	11.00		
18 to 24 ins.	15.00		
2 to 3 ft.	3.00		
3 to 4 ft.	6.50		
4 to 5 ft.	9.50		
5 to 6 ft.	15.00		
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NORTH.			
12 to 18 ins.,			
2 to 3 canes.	4.50		
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3 to 4 canes.	5.50		
18 to 24 ins.,			
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18 to 24 ins.,			
3 to 4 canes.	6.50		
2 to 3 ft.,			
3 to 5 canes, 2-yr..	7.50		
2 to 3 ft.,			
5 canes up, 2-yr..	10.00		
PRIVET, THOMPSON.			
18 to 24 ins.,			
4 to 6 canes, 2-yr..	7.50		
18 to 24 ins.,			
6 canes up, 2-yr..	10.00		
POPLARS, BOLLEANA,			
1-yr.-old.			
Whips, 4 to 5 ft.	20.00		
Whips, 3 to 4 ft.	15.00		
Whips, 2 to 3 ft.	6.50		
Lining-out,			
18 to 24 ins.	50.00		
Lining-out,			
12 to 18 ins.	30.00		
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Branched, 5 to 6 ft.	22.50		
Branched, 4 to 5 ft.	15.00		
Whips, 5 to 6 ft.	10.00		
Whips, 4 to 5 ft.	7.50		
Whips, 3 to 4 ft.	5.00		
Whips, 2 to 3 ft.	4.00		
PURPLE LEAF PLUM,			
Newport.			
5 to 6 ft.	90.00		
4 to 5 ft.	75.00		
3 to 4 ft.	60.00		
FLOWERING PEACH,			
Double red.			
5 to 6 ft.	65.00		
4 to 5 ft.	55.00		
3 to 4 ft.	45.00		
THUJA ORIENTALIS.			
Chinese Arborvitae, 2-yr.			
9 to 12 ins., sdls.	4.00	30.00	
PINUS NIGRA.			
Austrian Pine, 1-yr.			
2 to 4 ins., sdls.	4.00	35.00	
JUNIPERUS VIRGINIANA,			
Platte River, 1-yr.			
2 to 4 ins., sdls.	2.50	20.00	
4 to 6 ins., sdls.	3.50	30.00	
30 at 100 rate; 300 at 1000 rate.			
Packing FREE.			

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This Business of Ours

Reflections on the Progress and Problems of Nurserymen

By E. Sam Hemming

THE LANDSCAPING OF EXTENSIVE AREAS.

Since World War I and the depression of the 30's, the breakup of large, gardened estates has been so swift and pronounced that nearly all of the landscape interests in the profession, such as the nursery industry and garden magazines, have concentrated on the small place. I think this has been a mistake, because a counter-trend has been under way, although it is in contrast to the superbly manicured and adequately staffed large garden.

Today, a large number of medium-wealthy and wealthy persons are buying and operating, either by themselves or through managers, large farms in the east and middle west and ranches in the far west, which contrast with the old estates. Besides these, a large group of the American farm population, those who have big farms, is forming a new aristocracy. These two wealthy groups are becoming accustomed to modern, luxurious living and are demanding not only handsome homes, cars and home furnishings, but also the surroundings to match them.

Because of the geographical location of our own business in Maryland, we have had considerable experience in the past twenty years with the types of wealthy country people just described; perhaps fifty per cent of our work involves landscaping their properties. Where the well-to-do client in a suburban area might spend \$1,000 to \$5,000 or more for landscaping an acre or two, ours will spend a similar amount on 200 to 2,000 or more acres.

There are three general types of these farms: The tidewater farms that stretch from New England to Georgia and the Gulf, the big, rich farms of the middle west and the mountain-sheltered ranches of the far west. It is the first, only, with which I am familiar and which I shall discuss.

The first thing I have noticed is that one must condition his thinking. On the small place, the tendency is always to enclose it and set it off as a small gem in its own setting, everything being concentrated and the plot being a unit in itself. On a large place, you do the reverse; the feeling is to open up the whole area, and let the horizon be the margin of en-

closure; the fences are the utilitarian posts and rails or the semiinvisible wire type, rather than the high, solid hedge or screen fence. Unsightly views and buildings are either softened by plantings or made neat with paint. Large trees, open fields and pastures and woodland make the setting.

The water-front farm has two aspects that are more or less peculiarly its own; first, it has a driveway from the public road that is often a mile or more long, and second, the home has either two front doors, or if only one, an approach to the side or rear, for the front is always the water side. Long drives on these places are typical; they may be straight or curving through the woods and need no treatment other than a little work with the axe; they may be straight through open fields, usually with a fenced-in width of fifty or sixty feet, or they may curve through open fields, similarly fenced.

There is only one way to treat the straight drive through open fields,

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other than to leave it bare, and that is to plant an avenue of large-growing trees, generously spaced, about fifty feet apart each way. Of the considerable variety of trees that we have tried, I like the results obtained with silver maple, red maple, red cedar, Loblolly pine and pin oak. A too soft-wooded tree breaks up too easily, and the choice red oak, sweet gum, tulip poplar and certain exotics that do not become established easily result in an uneven stand by the time all failures are replanted.

The curving drive seems best planted by massed groups of native trees, such as maples, gums, Loblolly pine, cedar, Judas and dogwood, with an occasional single, large-growing specimen, these being placed at certain accent points. Not only must the masses of rhododendrons and azaleas, usually found on the short, curving drives of suburban



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No. 1, 40¢—No. 1½, 30¢—No. 2, 25¢

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List of Varieties — Hybrid Tea Everblooming
Roses, 2-yr., Field-grown, Budded on Japonica
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the best landscape plantings.

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properties, be forgotten, but masses of common flowering shrubs and trees generally are not practical, and the picturesque old apple usually becomes an insect-ridden runt. The larger the area of pasture-type grass, which can be kept mowed with a sickle bar, the more attractive the drive will be.

The house area is usually of generous proportions, often ten acres, with the house usually several hundred yards from the water. Since the site is often an old one, there are usually some big, old trees to set off and frame the house. A few more trees may be necessary and should be generously spaced. The foundation planting as we usually think of it is only of incidental importance. The most important feature is the open lawn, both the open vista to the water and on the land side. Because of the broad perspective and the sense of distance, greens-like texture is unnecessary, and often it is possible to merge the lawn into pasture-like grass, which can be mowed with a sickle bar, some distance from the house. Or the distant perspective can be achieved by the use of an electric fence and actual pasture, just as in colonial and English gardens they used the ha-ha wall and sheep. It is important to keep the lawn area open, except for the big trees. Mowing is important, too. I know of one client who used two small power mowers. Cutting the lawn this way took his men almost a week. Later, his farm tractor and a 3-gang fairway mower took less than a day.

The best driveway approach is usually to a side entrance, which serves both for utility and household purposes, with a minimum yet adequate driveway area. The day of the big carriage turn has disappeared, and if one can have open lawn from both front doors, so much the better.

The view to the shore line is best cut into broad vistas. Neither native growth fringe nor a completely cleaned-out, open panorama is so attractive as two or three open vistas of water.

The house area is not usually enclosed by planting, as it is on the small lot, although an attractive evergreen grouping might be planted to the northwest as a windbreak if the broad water is in that direction and if it can be done without obstructing the view.

In the colder prairie states, windbreaks are more important. The barnyard area, which often is contiguous, can be softened with trees, but paint and neatness are most important.

Flower garden areas, when desired, are usually small, compact and close-

EVERGREEN LINERS

Pfitzer Juniper

Savin Juniper

Spreading Jap. Yew
(cuspidata)

Upright Jap. Yew
(capitata)

Euonymus Vegetus

In plant bands, 300 or more, assorted, **\$13.50** per 100. Less than 300, **\$15.00** per 100.

Sizes 5 to 8 ins.; Yews, 4 to 6 ins.

Book your order for early spring. We winter all plants under glass, and they make a tight solid root-ball which more than satisfies. Soil will not shake off plants in shipping or planting.

McININCH GREENHOUSES
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NORWAY SPRUCE
Twice Transplanted

	Each
2 to 3 ft.	\$2.00
3 to 4 ft.	2.50

B&B or in new 1/2-bushel baskets for live Christmas trees.

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GOOD TREES SCARCE

Our fruit stock is in beautiful shape, but our supply is not too large. Evergreens and shrubs are not too plentiful, and many varieties are practically off the market. We are anxious to take care of our regular customers and suggest that orders be entered as early as possible.

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ROSA MULTIFLORA

For living fence and soil conservation planting.
Thorny type, grown locally in our own nursery.

8 to 18 ins., excellent caliper.

	Per 1000		Per 1000
1000 to 25,000	\$18.00	50,000 to 100,000	\$15.00
25,000 to 50,000	16.50	100,000 and up	14.00

This is our wholesale price list for November delivery.

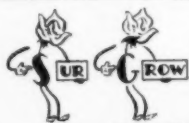
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CLOVERNOOK NURSERIES, Inc.

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MILWAUKEE 11, WIS.

ROSE BUSHES



Here in Tyler some 50 Rose Growers are cooperating together to give you the finest of all field grown roses. We grow what we sell—We sell what we advertise. Write us for prices, Box 808, Tyler, Texas.

CO-OPERATIVE

ROSE GROWERS

ly tied to the house and are best planned as a small formal area enclosed with picket fence or low hedge. The gardener is most often the lady of the house, with some unskilled help. In a good proportion of these places there is a swimming pool tied into the house and garden design.

Naturally, there are all sorts of variations and hybrids of these general designs, some good, some bad and some indifferent. Yet there is and will be a considerable increase in the development of this kind of farm home, and I believe there has not been sufficient emphasis on the philosophy of this type of landscaping.

E. S. H.

COVER ILLUSTRATION.

Thuja Occidentalis Woodwardi.

Of the many varieties of Thuja occidentalis, the American arborvitae, or white cedar, a half dozen or more are of dwarf globe-shaped form. One of the best of these, if not the best, and among the most widely known of the globose forms, is Thuja occidentalis woodwardi. The foliage is dark green and not so dense as on most of the other globe forms; it appears in vertical planes at the ends of the branchlets. Branches and branchlets are erect or ascending.

The Woodward arborvitae assumes a globe shape naturally and keeps its rounded shape even though it in time grows to a considerable diameter.

This useful form was originated and introduced many years ago by the proprietor of the Reading Nursery, Reading, Mass., and named for his son, J. Woodward Manning.

Since the native habitat of the American arborvitae is in the eastern half of the United States and usually in swampy ground, its forms are generally quite hardy and do best in fertile soil with ample moisture. Presenting a somewhat formal aspect, the globe forms fit well in certain types of landscape planting.

JACK'S LANDSCAPE SERVICE, operated by Jack Ginsburg, has moved from 1423 Avenue I to 1030 East Twelfth street, Brooklyn 30, N. Y.

AT HIS home at Wyandanch, N. Y., Dr. Herman B. Baruch, owner of the Bagatelle Nursery, was married to Baroness Anne Marie Mackay October 21. Dr. Baruch served as ambassador to the Netherlands from 1947 to September, 1949. He is the brother of Bernard M. Baruch.

IN CARLOTS

American Elm, 1 1/4 to 2-in.

Thurlow Willow, 5 to 6 ft.,
up to 2-in.

Apple, 2 and 3-yr., up to 1-in.

Cherry, 1-yr., up to 1 1/16-in.

Peach, up to 1-in.

Pear and Plum, up to 1 1/16-in.

Shrubs, Shade Trees, Peonies and
Evergreens.

C. M. HOBBS & SONS, Inc.
BRIDGEPORT, IND.

CHRISTMAS TREES

Scotch Pine—Plantation-grown
in Ontario. Full, bushy, each tree
a perfect specimen.

Balsam—Nova Scotia, round-
needle type.

CARLOTS ONLY.
WRITE FOR PRICES.

GROWERS EXCHANGE, Inc.
Brightmoor Station
DETROIT 23, MICH.

COMPLETE ASSORTMENT OF

Evergreens, Fruit Trees, Shade
Trees, Roses and Lining-out Stock.

Write for complete list.

ONARGA NURSERY CO.
ONARGA, ILL.

Beautiful NATIVE RED CEDARS

5 to 10 ins. \$20.00 per 1000
10 to 15 ins. 35.00 per 1000
15 to 24 ins. \$ 7.50 per 100
2 to 3 ft. 12.50 per 100
3 to 4 ft. 17.50 per 100

Will not be able to supply demand
again this season. First come, first
served.

Write for our new, very low prices on
nursery stock. Big reductions.

ROLLERS NURSERY
Phone: 661 ROGERS, ARK.

OKLAHOMA CITY LANDSCAPE CLINIC.

More than 300 homeowners, inter-
ested in securing practical advice and
information on beautifying their
home grounds, registered to attend
the landscape clinic held October 19
and 20 at Oklahoma City, Okla. The
Oklahoma State Nurserymen's Asso-
ciation cooperated with the better
gardens committee of the Oklahoma
City chamber of commerce and the
Oklahoma City council of garden
flower clubs to bring the landscape
clinic to Oklahoma City again this
year.

Emphasis was given to the use of
plant materials and methods particu-
larly adapted to Oklahoma climate
and soil. Oklahoma nurserymen
served on the panel of experts offer-
ing suggestions and answering ques-
tions of homeowners.

The program was varied and con-
tained something of interest to all
gardeners. Speakers from Oklahoma
A. and M., Stillwater, gave valuable
information on such important topics
as building the soil, mulching, insecti-
cides, watering, the importance of
planning and other subjects of in-
terest to homeowners in this state.

Some of the outstanding talks in-
cluded "Soil Preparation and Main-
tenance," by E. L. Whitehead, ex-
tension horticulturist; "The Place of
Perennials and Bulbs in Landscape
Design," a helpful talk and discus-
sion led by J. C. Garrett, assistant
extension horticulturist and land-
scape specialist, and the address,
"New Trends in Plant Material and
Their Function," by Robert P. Ealy,
professor of landscape design. An-
other Oklahoman appearing on
the program was F. Edgar Rice,
Bartlesville, regional vice-president
of the National Hemerocallis So-
ciety, who talked on "The Culture
of Day Lilies."

Better planning of home grounds
and improved methods of garden-
ing were stressed in the address of
William A. Dean, Chicago landscape
architect. Mr. Dean stressed the im-
portance of a conference of the land-
scape architect, the building con-
tractor and the homeowner before
construction of a new home is begun.
The landscape features of the entire
block should be considered as a unit,
and trees should be of the same kind
if possible, he said.

The value of counseling and plan-
ning, as well as construction and
maintenance, was emphasized by
Henry M. Lambert, Lambert Land-
scape Co., Dallas, Tex., who spoke
on "Development and Care of Small
and Medium-size Grounds." Practi-



Growers of a complete
line of deciduous and
coniferous species.

JEWELL NURSERIES, INC.
Lake City, Minn.

Northern-grown Stock

Send
for
Price
List.

J. V. BAILEY NURSERIES
St. Paul 6, Minn.

QUALITY STOCK In Good Quantity

	Each
Excelsa Arborvitae, 24 to 32 ins.	\$1.25
Excelsa Arborvitae, 30 to 36 ins.	1.50
Baker Arborvitae, 24 to 30 ins.	1.30
Baker Arborvitae, 30 to 36 ins.	1.50
Spiny Greek Juniper, 15 to 18 ins.	1.25
Spiny Greek Juniper, 18 to 24 ins.	1.50

Write for list of other stock.

VERHALEN NURSERY CO.
SCOTTSVILLE, TEXAS

Your Profits Grow in Verhalen Plants.

HEAVY 2-YR. SHRUBS FRUIT TREES

SPECIMEN EVERGREENS

LINING-OUT STOCK

SNEED NURSERY COMPANY

P. O. Box 798
Oklahoma City 1, Okla.

WE OFFER FOR FALL, 1949 and SPRING, 1950

Liriodendron Tulipifera

Tulip Poplar	Per 100	Per 1000
6 to 12 ins.	\$1.25	\$10.00
12 to 18 ins.	1.75	15.00
2 to 3 ft.	2.50	20.00
3 to 4 ft.	3.50	30.00

Cercis Canadensis

Redbud	Per 100	Per 1000
6 to 12 ins.	2.00	15.00
12 to 18 ins.	2.50	20.00
2 to 3 ft.	3.50	30.00
3 to 4 ft.	4.50	40.00

Cornus Florida

White Dogwood	Per 100	Per 1000
6 to 12 ins.	2.00	15.00
12 to 18 ins.	3.00	20.00
2 to 3 ft.	4.00	35.00
3 to 4 ft.	5.00	45.00

Azalea Bakeri

Red to Crimson	Per 100	Per 1000
6 to 12 ins.	4.00	30.00
12 to 18 ins.	5.00	35.00
18 to 24 ins.	6.00	50.00

Azalea Calendulacea

Flame Azalea	Per 100	Per 1000
6 to 12 ins.	4.00	30.00
12 to 18 ins.	5.00	35.00
18 to 24 ins.	6.00	50.00

Red Cedar

	Per 100	Per 1000
4 to 6 ins.	3.00	25.00
6 to 12 ins.	4.00	35.00
12 to 15 ins.	5.00	45.00
Special grafting size, 1/4-in. and up.	5.00	45.00

We have some attractive prices on
Junebud Peaches, 18 ins. and up, also
Apple Whips, 18 ins. and up.

H. G. HALLUM NURSERY
McMINNVILLE, TENN.

ORNAMENTAL TREES, SHRUBS and EVERGREENS

Forest Tree Seedlings.
Lining-out Stock.

Write for wholesale price list.

SCRUGGS NURSERY

R. 7 McMinnville, Tenn.

LONICERA HALLIANA

Hall's Honeysuckle

If you need Hall's Honeysuckle
for either fall or spring, write us for
free samples and prices on large or
small quantities.

O. H. PERRY NURSERY CO.

Box 545 McMinnville, Tenn.
Telephone: 375-X

NURSERY STOCK

Rhododendron	Leucothoe
Carolinianum	Native Azaleas
Maximum	Hemlock (Tauga)
Kalmia	... and others

NATURE'S GREENHOUSE
TALLULAH FALLS, GA.

cal points for getting results on a
limited budget also were given by
Mr. Lambert.

A demonstration tour arranged by
the Oklahoma City Nurserymen's As-
sociation was an interesting feature of
the 2-day meeting. Technicolor mov-
ing pictures of Bellingrath Gardens,
Mobile, Ala., were shown during the
luncheon hour Wednesday. Slides
were used with talks to help demon-
strate correct landscaping. Some
slides of the Longwood Gardens of
the Du Pont estate, Kennett Square,
Pa., were shown.

The illustrated lectures, round-
table discussions, exhibits and the
opportunity to ask questions and have
them answered by experts all made
home gardeners quick to request that
another clinic be held next fall. The
exact date will be announced later,
but officials are of the opinion that
it will be held next October, when
the weather is usually bright and fa-
vorable.

These landscape clinics, to which
admission is free, are attracting larg-
er numbers of home gardeners each
year, and the number of well planned
and maintained yards and lawns at
Oklahoma City is increasing.

Betty H. Prim.

NAME MINNESOTA FRUITS.

Five new varieties of fruit are be-
ing named and introduced by the
staff of the University of Minnesota
this year. Four of them were pro-
duced at the fruit-breeding farm at
Excelsior, and the fifth is of South
Dakota origin, although it has been
tested and used in breeding work for
forty years at the Minnesota experi-
ment station.

The varieties being named are:
Minn. No. 714, Oriole; Minn. No. 4,
Golden Spice; Minn. No. 63, Orient;
Minn. No. 101, Redglow, and S.D.
No. 27, South Dakota.

Oriole is a summer apple of un-
known parentage which came from
seed planted in 1914. It is hardy, is
a little slow in fruiting and tends
to annual cropping. The fruit is
large, roundish, striped and splashed
with red on orange-yellow ground.
Ripens four days to a week before
Duchess.

Golden Spice is a pear of unknown
origin, vigorous, very hardy and
very productive. Fruit is small but
attractively colored a clear, rich yel-
low, often with red blush. Ripens in
mid-September.

Orient, a strain of Prunus tomen-
tosa, known as Chinese bush cherry
or Nanking cherry, is self-fertile.
Very vigorous, it may be grown as
bush or small tree, as ornamental or

HEMLOCKS

Specimen stock transplanted 4 and 5
times. Sheared and open styles. In
large truckload lots. Select them your-
selves. 3, 3 1/2, 4, 4 1/2 and 5-ft. sizes. We
grow the finest. Write for full particu-
lars. We are taking spring orders now.
Discounts on quantity orders.

We have *Taxus hicksi* and *Taxus
capitata*. Also, a few *Ball Carriers* in
stock. Saves hard lifting—less men
needed.

SUNNYVIEW NURSERIES

George Colmorgen, Prop.
Rt. 84, Lake Co. PERRY, OHIO

LIGUSTRUM AMURENSE

	Per 100	Per 1000
12 to 18 ins., br.	\$4.00	\$37.50
9 to 12 ins., br.	3.50	32.50
6 to 18 ins., liners	2.50	22.50

LIGUSTRUM OVALIFOLIUM

	Per 100	Per 1000
18 to 24 ins., br.	3.50	27.50
12 to 18 ins., br.	2.50	22.50
6 to 18 ins., liners	2.00	15.00

ABELIA GRANDIFLORA

	Per 100
6 to 12 ins., lining-out	\$ 7.50
12 to 18 ins., lightly br.	12.00

Order now for

Spring or immediate delivery.

McMINNVILLE TREE CO.
BOX 125 McMINNVILLE, TENN.

**SERVING YOU SINCE '72
FROM
THE CENTER OF THE SOUTH**

THE Southern
Nursery & Landscape Co., Inc.
Est. 1972
WINCHESTER, TENNESSEE

Phone-Write-Wire for Quotations

QUALITY JUNIPER GRAFTS

For Spring, 1950, delivery, from 2 1/2-
in. pots on Virginia understock.

We are grafting *Juniperus virginiana
canaerti*, *glauca*, *pyramidiformis* (Dun-
dee), *burki* and *keteleeri*. Grafts, 40c,
packing at cost.

PAUL ARTERBURN NURSERY

BOX 72 ST. MATTHEWS, KY.

30,000 Potted Taxus Liners

1, 3 and 5-year.

Weigela Eva Rathke, transplants.
Viburnum Rhytidophyllum.

HUMPHREYS LANDSCAPE SERVICE
MT. STERLING, KY.

for fruit. Often bears after second year. Ripens in early July. Fruits are a little more than one-half inch in diameter, colored bright medium red.

Redglow is a plum (Burbank x Jewell) which is normally vigorous, productive and hardy. Ripens in mid-season. Fruit is roundish oblong, colored a rich dark red with heavy bloom.

South Dakota is a plum which is traced back to the early plum-breeding work of Dr. N. E. Hansen. Propagating wood of the variety was brought to the Minnesota station by the late Charles Haralson in 1907, and the variety was developed there. Of the native plum type, hardy, vigorous and productive. Fruit is medium size, oval and somewhat flattened.

TWO NEW BLUEBERRIES.

Two new highland blueberry varieties have been announced by the United States Department of Agriculture. One of these varieties, Berkeley, produces larger fruit than any other variety in the trade, while the new Coville is a close runner-up. Both varieties were developed by Dr. George M. Darrow, principal horticulturist, United States Department of Agriculture, and Franklin A. Gilbert, research associate at the New Jersey agricultural experiment station.

Berkeley produces its big, firm, light blue berries on vigorous, productive bushes which prove to be reasonably easy to propagate. The variety is a combination of Stanley x Jersey x Pioneer and produces its fruit in open, loose clusters which ripen during midseason about a week after Stanley and a week before Jersey.

The place of the latest variety in the trade to ripen is now held by the new Coville, whose berries are almost as large as those of Berkeley, are firm and have a tart flavor until fully ripe. They also have a high aroma. The loose, open clusters grow on vigorous, productive bushes which are also relatively easy to propagate.

Both varieties are recommended for trial commercially, from Maryland to New Jersey, but not farther south than North Carolina. Berkeley has shown promise in Michigan, and Coville is being studied there.

EXPANSION of the Collinsville, Va., facilities of the Myers Nursery, Dansville, Va., has been announced by Ted M. Myers, proprietor. The firm is planning to spend \$35,000 on the expansion program.

FRUIT TREES

APPLE

	Each	Per 10	Per 100	Per 1000
2 and 3-yr., 11/16-in.	\$0.60	\$3.00	\$40.00	\$350.00
2-yr., 9/16-in.	.50	4.00	35.00	300.00
2-yr., 7/16-in.	.40	3.00	25.00	200.00
3-yr., 5/8 to 1-in.	.75	6.50	55.00	500.00

Anoka	Early Harvest	Rome Beauty
Bonum	Early Redbird	Stayman
Close	Hyslop Crab	Summer Rambo
Cortland	Jonathan	Summer Yellow Delicious
Delicious	Lodi	Winesap
Double Red Delicious	Lowry	Winter Banana
Double Red Jonathan	M. B. Twig	Yellow Transparent
Double Red McIntosh	Malden Blush	York Imperial
Double Red Rome	N. W. Greening	
Double Red Stayman	Paragon	

PEACH

	Each	Per 10	Per 100	Per 1000
9/16-in. and up.	\$0.50	\$4.50	\$40.00	\$350.00
7/16-in.	.40	3.50	30.00	250.00
2 to 3 ft.	.35	3.00	25.00	200.00

Belle of Georgia	Halehaven	Late Elberta
Brackett	Heath Cling	Lizzie
Elberta	Hiley	Redhaven
Goldencrest	J. H. Hale	Shipper's Late Red
Golden Jubilee	Indian	Southland

CHERRY

	Each	Per 10	Per 100	Per 1000
Early Richmond and Montmorency, 11/16-in.	\$1.00	\$9.00	\$85.00	\$800.00
Early Richmond and Montmorency, 9/16-in.	.90	8.00	75.00	700.00
Early Richmond and Montmorency, 7/16-in.	.75	6.50	60.00	550.00
Large Montmorency, 5/8 to 1-in.	1.25	1.10	100.00	

PLUM

	Each	Per 10	Per 100
11/16-in.	\$0.80	\$7.50	\$70.00
9/16-in.	.65	6.00	55.00
7/16-in.	.55	5.00	45.00

Abundancer	European Prune	Red June
Burbank	Mammoth Golden	Wickson

KIEFFER PEAR. 2-year.

	Each	Per 10	Per 100
5/8 to 1-in.	\$0.75	\$6.50	\$60.00
11/16-in.	.50	4.50	40.00
2 1/2-in.	.40	3.50	30.00

WAYNESBORO NURSERIES
WAYNESBORO, VIRGINIA

CERTIFIED BLUEBERRY PLANTS

1-year Rooted Cuttings, 2 and 3-year Nursery Plants,
All Varieties.

Propagated from stock taken from our own productive farms.

Guaranteed True to Name.

SEND for RIGHT WHOLESALE PRICES.

GALLETTA BROTHERS'
BLUEBERRY FARMS
HAMMONTON, NEW JERSEY

ROBERTS NURSERY CO.

Wholesale growers of Dependable

FRUIT TREES

We solicit your list of wants.

DANSVILLE, N. Y.

FRUIT TREES

HARRISON BROTHERS
NURSERIES

G. Hale Harrison, General Manager
BERLIN, MARYLAND

SMALL FRUIT PLANTS

Thirty varieties of Grapes, including the

GOLDEN MUSCAT

also

Currants and Berry plants

FOSTER NURSERY CO., Inc.
FREDONIA, N. Y.

Peach Varieties

PEACH SPELLDOWN.

In an effort to help nurserymen improve their spelling of variety names, John T. Bregger, president of the American Pomological Society, has compiled the following list of peach varieties whose names are often misspelled. He submits the list to guide catalog compilers and others to greater accuracy in spelling names of peach varieties.

OFTEN MISPELLED AS TWO WORDS

Afterglow	Halehaven
Ambergem	Laterose
Dixigem	Newday
Dixired	Redcrest
Early Halehaven	Redhaven
Fairhaven	Redrose
Fireglow	Summercrest
Goldeneast	Sunhigh
Halegold	Triogem

COMMON VARIETIES AND SYNONYMS

Variety	Synonyms
Augbert	Augberta Roberta August Elberta Golden Elberta Lemon Elberta Snyder Elberta Red Bird Cling Beauty
Early Elberta (Gleason)	Murray's Beauty Spencer Beauty Texas Beauty
Early Wheeler	Fay Elberta
Fair Beauty	Gold Medal
Fay	Bodine Elberta
July Elberta	Burbank Burbank Elberta Burnett Burnett Elberta Early Elberta Golden Rose Ho-hum Jewel Kim Early Elberta Mulberry New Elberta Socala
Krummel	Krummel October
Mayflower	Mountain Rose
Mikado	June Elberta
Rochester	Pacific Gold

PEACHES FOR SOUTHEAST.

Peaches grown commercially in southeastern United States should be chosen to meet the requirements of the climate as well as special requirements of marketing and competition with fruit of other regions, according to Earl F. Savage in his article "Peach Varieties in the Southeast" in the autumn issue of "Fruit Varieties and Horticultural Digest," published by the American Pomological Society.

Southeastern peach orchards grow rapidly and are short-lived; thus varieties can be discarded and new ones

chosen as fast as they can be proved. Early-ripening varieties are replacing later ones in order more easily to control plum curculio and Oriental fruit moth and because early-season fruit brings higher prices. A change in consumer preference for yellow-fleshed peaches over white has caused the white-fleshed varieties to be discarded. Most canneries will no longer process white-fleshed peaches. Such old favorites as Golden Jubilee and Halehaven are being discarded because they do not ship and handle well, while J. H. Hale is passing out of favor because of low productivity.

To overcome these difficulties several new varieties, such as Dixired, Dixigem and Southland, have been developed and are gaining in popularity. Others are still under trial.

Mr. Savage names the following varieties as some of the better commercial peaches for the southeast.

EAST MALLING FRUIT TREE STOCKS

East Malling, I, II, IV, VII and IX.

Quince type A, B and C.

Myrobalan B.

Fruit trees on Malling stocks.

ENGLISH VARIETIES OF GOOSEBERRIES

MANTEN'S NURSERY
WHITE ROCK, B. C., CANADA

GRAPEVINES

Heavy, well rooted

2-yr. Concord and Niagara
Hydrangea P.G.
Peach

Write for prices.

Thorne Brewster

WILLOWBEND NURSERY
Davis Rd. Perry, Ohio

A General Line of FRUIT and ORNAMENTAL TREES and PLANTS

BUNTINGS' NURSERIES, Inc.
Box 3 SELBYVILLE, DEL.

SMALL FRUIT PLANTS

Evergreens—Shrubs
Asparagus—Rhubarb
Send for Complete Trade List.

W. N. SCARFF'S SONS
NEW CARLISLE, O.

They are listed according to their periods of ripening.

Dixired (Halehaven selfed)—Highly colored, early, yellow, clingstone. Good quality, ripening about six weeks before Elberta. Fruit medium size, round, with very light pubescence.

Early-Red-Fre—White, good size, medium quality. Ripens five weeks before Elberta, when no good yellow or white peaches are available.

Dixigem (Dewey x St. John x Southaven) — Medium size, early, yellow-fleshed with light pubescence. Ripens about four and one-half weeks before Elberta. Somewhat cling in some years; however usually quite free when ripe. Good shipper, high dessert quality and superior for canning and freezing.

KELLY BROS.

offer for fall and spring shipment.

Apple
Pear
Sweet and Sour Cherry
Plum
Quince

All above, 1 and 2-year.

Peach and Apricot, 1-yr.

Black Walnut, 3 to 4 and 4 to 5 ft.
Spiraea Vanhouttei, 18 to 24 ins., 2 to 3 ft. and 3 to 4 ft.

Send for our latest wholesale list.
Your surplus list would be appreciated.

KELLY BROS.
NURSERIES, Inc.
DANVILLE, N. Y.

CHERRY TREES

One-year-old, well branched.

MONTMORENCY.

For complete list write

EDWARD BACON & SON
Growers of Fruit Trees
Since 1882.
DANVILLE 1, N. Y.

WE OFFER . . . Our General Line of

SMALL FRUIT PLANTS

Let us quote on your requirements.

L. J. RAMBO'S WHOLESALE NURSERIES
Bridgman, Michigan

Pearson Hiley—White flesh; plant patent 760. Trees not yet available for general distribution, but mentioned because fairly large commercial shipments will be made bearing on price received for Hiley type. Is an extra-early Hiley.

Redhaven (Halehaven x Kalehaven) — Yellow-fleshed, medium size, usually brilliant red. Heavy thinning necessary for size. Classed freestone, but usually clings too much for commercial use. Good pickling peach.

Early Hiley—Apparently a bud sport of Hiley; ripens about three weeks before Elberta and one week before regular Hiley. White flesh. Is replacing Hiley, especially in south Georgia peach section.

Southland (Halehaven selfed)—Round, yellow, freestone, medium to large size, ripening about two weeks before Elberta. Attractive with light red blush overlying yellow ground color. Flesh firm and slow-ripening.

Triogem (J. H. Hale x Marigold)—Firm, yellow-fleshed, freestone. High quality, ripening about two and one-half weeks before Elberta. Ripens slowly, needs good culture, thinning for size. Superior for canning and freezing.

Hiley—White-fleshed; ripens about two weeks before Elberta. Overlap of Sullivan Elberta season and public resistance to white-fleshed peaches will probably prevent further plantings of this variety except for local markets.

Halehaven (J. H. Hale x Southhaven) — Small some seasons, not particularly good shipper, color too dull to be attractive. Fairly good for processing.

Sullivan Elberta—Similar to regular Elberta, but ripens a week earlier. Is apparently much more susceptible to bacteriosis and phony peach disease than regular Elberta, but its earliness decreases amount of injury likely to occur.

Elberta—Yellow, freestone. Is still the No. 1 variety in southeast as well as entire nation. Chief objection is low quality. Is declining in some southern peach sections because of lateness, which results in greater second-brood curculio damage.

APPOINTED administrative assistant in the agricultural census branch of the census bureau, M. Trumon Fossum will aid in the 1950 horticultural census. Hoping to begin the census in January, the bureau contemplates taking a detailed census of horticultural specialties—flowers, plants, nursery products, greenhouse vegetables, bulbs and flower seeds.

STRAWBERRY PLANTS

Certified

Grown on new land in isolated area. 30 acres of the largest and thriftiest plants we have ever grown. We are in a position to make you attractive prices on the following varieties.

Blakemore
Klonmore
Klondike
Missionary
Tenn. Beauty

Tenn. Shipper
Robinson
Premier
Gem
Streamliner

We will ship direct to your customers if you desire. You're welcome to come and see our fields. Let us quote you on your entire needs.



ROMINES PLANT FARMS

Route 3

DAYTON, TENN.

STRAWBERRY PLANTS

All leading varieties.
Grown under irrigation.

We are now booking orders for the 1949-50 season.

Will ship direct to your customers if desired.

Prices on request.

MULLINS PLANT FARMS

410 Brookfield Ave.
CHATTANOOGA 4, TENN.
Phone: 2-9955

WE OFFER FOR FALL, 1949

OUR USUAL SUPPLY OF NURSERY STOCK

Apple	Peach	Pear
Plum	Cherry	Apricot
Figs	Grapes	Pecans

June Bud Peach
Japanese Persimmon
Ornamental and Shade Trees

Send us your want list;
write for prices.

Page 56 in A. A. N. Badge Book.

COMMERCIAL NURSERY CO.

Nicholson Bros. DECHERD, TENN.

GRAPE CUTTINGS

New low prices per 1000.
Concord, \$3.75; Niagara, \$4.00
Delaware, \$4.50; White Elvira, \$4.50
Wire-bound, 100 per bunch, expertly cut. Packing free. Start cutting December 1.

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Seedless Concord Fredonia
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OBITUARY

Paul H. Oliver.

Paul H. Oliver, 50, manager of the Zillah, Wash., branch of Mount Arbor Nurseries, died October 12. He suffered a heart attack while hunting on nursery property.

Mr. Oliver had devoted nearly thirty-five years to the nursery business, having begun his career under his father at Perry, Kan. He became associated with Mount Arbor Nurseries at Perry in 1929 and moved to the Zillah, Wash., branch in 1935. Wayne N. Welch has taken over management of this branch until a successor to Mr. Oliver can be found.

Surviving Mr. Oliver are his widow, Mrs. Cecile L. Oliver; a daughter, Paula, a brother and two sisters.

Pauline Crum Wise.

Pauline Crum Wise, wife of John M. Wise, founder of the Wise Nurseries, Freeport, Ill., died September 25, at the age of 75. She had suffered a long illness.

Mr. and Mrs. Wise were married at Chicago in 1896 and had shared their interest in trees and flowers throughout their married lives. They had celebrated their golden wedding anniversary in 1946.

Born at Maysville, Ky., Mrs. Wise was educated in Kentucky schools. She was an active member of the Audubon Society, and Wiseland, the family home, is a bird sanctuary.

Besides Mr. Wise, she is survived by two children, Mrs. Paul Offenhiser, Pittsburgh, Pa., and Brewster Wise, Rockford, Ill.; two sisters, Mrs. J. W. Hill, Asheville, N. C., and Mrs. Manley Hawley, Louisville, Ky., and four grandchildren.

Mrs. L. C. Mundy.

Mrs. L. C. Mundy, wife of Lester Mundy, Mundy Nursery, Wichita Falls, Tex., died October 14. Her death followed a long illness.

OCTOBER 30, Forest Nursery Co., Inc., McMinnville, Tenn., held the formal opening of its retail salesyard and landscape service, located on Highway 56, two miles from McMinnville.

THE mailing address of George Frank & Son, growers of hardy perennials and rock plants, has been changed from East Rochester, N. Y., to Penfield, N. Y. The owner of this wholesale and retail business is Howard J. Frank.

SAWDUST pH VALUES.

The pH values of many kinds of wood sawdust have been ascertained and reported by M. M. McCool in the Boyce Thompson Institute quarterly. As a result of the tests, which included yellow pine, red pine, blue beech, larch, locust, spruce, white oak, red oak, black oak, pin oak, white birch, elm, hemlock, sugar pine, redwood, maple, Japanese larch and cypress, the lowest value found was that of cypress, and the highest was that of hemlock. It was also found that the values of some of these became higher upon leaching with distilled water; thus, the pH value of a soil is likely to increase with time as some sawdusts placed in the soil are leached by rain water. The woods giving this type of sawdust were sugar pine, redwood, spruce, white oak, black oak, red oak, pin oak, maple and mixed pine shavings.

In some cases, addition of sawdust to the soil was proved to raise the soil's pH value, increasing the soil's acidity. Thus, it may be this increased acidity of the soil after application of sawdust which accounts for the unfavorable results often achieved after adding sawdust to the soil.

The study also revealed that wood shavings mixed with soil increase the rate of percolation of water through the soil to a greater extent than sawdust, but it was doubted that this benefit would last after a period of decomposition when the shaving particles would become finer.

CATALOGS RECEIVED.

WHOLESALE CATALOGS.

Blackwell Nurseries, Inc., Semmes, Ala.—Azaleas and camellias; illustrated in color; 32 pages, 6x9½ inches.

Mitsch Nursery, Aurora, Ore.—Evergreens, azaleas, heathers, perennials; 16 pages, 4x9 inches.

WHOLESALE PRICE LISTS.

Benton County Nursery Co., Rogers, Ark.—Fruit trees, roses, evergreens, ornamental trees and shrubs, vines, perennials, bulbs; 8-page folder, 4x9 inches.

Herbst Bros., New York, N. Y.—Seeds of trees and shrubs, perennials, annual flowers; 36 pages, 4x9 inches.

RETAIL CATALOGS.

Hill N'Dale Orchards, Tupelo, Miss.—Fruit trees, small fruits, roses, ornamental trees and shrubs; 24 pages, 5x8 inches.

RETAIL PRICE LISTS.

Wake Robin Farm, Home, Pa.—Wild flowers and ferns; 8-page folder, 4x9 inches.

ELEVEN acres of ground have been purchased by Richard J. Patterson at Springfield, Pa., on which he is starting a nursery salesyard.



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Pacific Coast News

REDWOOD EMPIRE CHAPTER ADOPTS CREDIT POLICY.

The sixty-seventh meeting of the Redwood Empire chapter of the California Association of Nurserymen was held at the Hamilton House, Fairfax, October 11. Past President Patrick T. Flynn, San Rafael, opened the meeting and turned over the chairmanship to Leo Ihle, San Rafael, the newly elected president, who gave a report on the state directors' meeting held in September.

The directors had considered the question of landscape accounts and moved that each chapter should formulate its own procedure. President Ihle appointed Donald Perry chairman of a committee, with James Eggers and Clyde von Grafen to study the matter.

Mr. Perry then asked the chapter members whether or not they wished to make control of landscape gardeners' past-due accounts a chapter project. He said that, in his own particular case, thirty-five per cent of his business was with landscape gardeners, and that seventy to eighty per cent of these were sixty days past due; they were his poorest risk. The members unanimously agreed that something should be done, that it should be a chapter project and that this chapter's action would stimulate other chapters to follow suit.

The following resolution, submitted by Mr. Perry, was unanimously passed to be the declared policy of the Redwood Empire chapter:

1. Be it resolved, that as of the first day of January, 1950, all sales to any person or firm be billed at retail.
2. That all sales made carrying discounts shall become due and payable on or before the twentieth of the month following the date of purchase.
3. That the failure to meet payments in full, when due, shall cause a forfeiture of all claim to any discount.
4. That no discount shall be granted on any subsequent purchases so long as an unpaid balance remains.
5. That all members of the association shall notify the chapter secretary, on or before the first of each month, of any person or firm sixty days in arrears, and that the secretary shall mail a copy of a list of all such delinquent firms to each member of the organization.
6. That no member of the organization shall sell on credit terms to anyone so placed by the secretary on the delinquent list, without first ascertaining whether or not the name has been removed therefrom.

President Ihle appointed a committee composed of James Eggers, Donald Perry and himself to draft a letter, in the name of the Redwood Em-

pire chapter, to be sent by each nursery to all of its landscape gardener accounts.

Continuing his report, President Ihle announced that the directors of the California Association of Nurserymen appointed Mrs. Glen Frates, at a salary of \$100 a month, for the next six months, to work out a publicity program in the east bay area. Her job will be to call on local newspapers in the area and pave the way for acceptance of news and publicity for the local chapters. Since most of the members do a large amount of advertising in the newspapers, this should be a relatively easy task. President Ihle appointed Clyde von Grafen to work with Mrs. Frates in the Santa Rosa area, and Donald Perry in Marin county.

The president appointed James Eggers, James Gaddis and Clyde von Grafen to nominate three members for the Redwood Empire chapter board of directors. It was suggested that they should be nominated and elected according to geographical distribution.

Further, commenting on the proceedings of the directors' meeting,

President Ihle said it was a good idea to employ the universal estate clause in one's bulletins, since it becomes an important item from a legal viewpoint. He reported that advertising was also discussed and favorably considered for the individual nursery. Donald Perry said that at the convention he found there was an excellent opportunity to have effective advertising produced by competent men at a cost of approximately \$50 to \$100 a year.

Directors of the Marin Art and Garden Center wanted to know whether or not the next garden show should be held in the spring or fall. Mr. Perry and Mr. Eggers thought that, even though there are more colorful display plants in the spring, sometime early in September would be best, since the weather undoubtedly would be more favorable. Rudolph Flynn brought out the point that a fall show would not be in conflict or competition with the Oakland spring show.

Ernest Munson, Sec'y.

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MOUNT VERNON NURSERY
MOUNT VERNON, WASH.

WASHINGTON NOTES.

The Krause Nursery & Greenhouse Co., Spokane, has been reorganized as two separate firms. One of these will be known as Krause Nursery and the other as Krause Greenhouse. The new Krause Nursery will be operated by Adolphe Krause, who was associated with the original firm and who will have charge of the landscaping work. A brother, Larry Krause, formerly engaged in electrical work, will supervise the office. They plan to do general landscaping work and operate a retail salesyard. To facilitate this work, a new office and storage building has been constructed.

Mr. Falick, of Falick's Nursery & Greenhouse, Spokane, announces that, because of ill health, he is retiring from the business. The firm has been purchased by Theodore Santen, who will operate it under the original name. A new residence has been built, and additional improvements are being planned for a greenhouse and salesyard.

As an addition to its plant production facilities, Stanek's Nursery, Spokane, has purchased ten acres of ground at Twenty-ninth and Regal streets. Fencing has been completed, and plans are now being made to build a 60x80-foot storage shed. Additional improvements will include a store building and implement shed. Most of the nursery's stock is being moved to this new location.

A new, 40-acre park area, to be known as Shadle park, will be donated to the city of Spokane. A \$550,000 construction project will eventually be included in the development of the area, which is located in northwest Spokane. The land is being given to the city by Mrs. Josie Shadle in memory of her husband, who was a prominent Spokane businessman. Another park was also given to the city by Mrs. Shadle in 1930. This older park was named Comstock park for her father. A \$35,000 landscaping project, the first stage in the construction of the new Shadle park, was recently completed by Stanek's Nursery, Spokane.

Severely ill in St. Elizabeth's hospital, Yakima, is Ray Beam, vice-president of the May Nursery Co., Yakima. Mr. Beam is expected to remain in the hospital for another month.

Alexander McNaughton, for many years a nurseryman in the northwest, was recently awarded a medal by Great Britain's King George VI. The medal was given to Mr. McNaughton by the British consul, at Seattle, for service, during the war years, for various British-American war relief

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Clean, healthy, hardy Yakima
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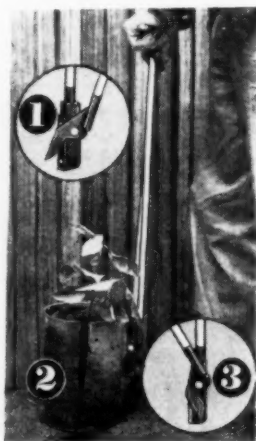
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Send for list.

Art Suhr, prop.

MT. HOOD NURSERY GRESHAM, OREGON

projects. At the age of 67, Mr. McNaughton still operates a growing establishment known as McNaughton's Azalea Nursery, Seattle.

C. W.

PINE SEEDLING ROOT ROT CONTROL.

Two fumigants, chloropicrin and ethylene dibromide, have been discovered to be effective in controlling root rot in southern pine nursery beds, according to Ralph M. Lindgren and Berch W. Henry in the United States Department of Agriculture's Plant Disease Reporter. Incidental to their experiments, they also discovered a new and effective weed killer.

As a result of careful experiments in which sixteen deep soil treatments in standard nursery beds were compared with an untreated plot, these two fumigants were most effective, while the fungicides used did not prove to be effective at all. This would indicate that a contributory cause of the root rot, which is so troublesome in southern pine seedling beds, might be traced to nematodes, and further research along these lines is going forward.

Formaldehyde and allyl alcohol were next runners-up in effectiveness against the rot, but were significantly inferior to the fumigants. However, it was discovered that two usual weedings were eliminated, and further weed growth was greatly reduced in plots in which allyl alcohol was used. A better stand of seedlings also resulted in the alcohol-treated beds, probably because the chemical had reduced early damping-off of seedlings. However, further experimentation is necessary to be sure that the alcohol is not deleterious to the soil. The fumigants had no weed-killing effect, although they were superior in controlling the root rot.

Research in both phases of these experiments will be continued.

RETIRED in 1944, E. R. Easley, Santa Cruz, Calif., is now helping his sons operate their new nursery, Easley Bros., 1706 Sequel avenue, Santa Cruz.

SOON to be opened one-half mile east of Coquille, Ore., is Cooper's Gardens Nursery, which is owned by Mr. and Mrs. Cooper, of Cooper's Gardens, Coquille.

BURGLARS entered the nursery-florists' shop of Eubanks Bros., Waxahachie, Tex., recently and stole an entire day's receipts. They forced the safe to get cash and checks.



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Cultivated Conifers, by L. H. Bailey. Systematic record of 1000 species and varieties. Discusses culture, propagation and uses. 404p. (1933) \$10.00

Beginning in the Nursery Business, by John J. Pinney. Complete series of articles reprinted from issues of *The American Nurseryman*. Booklet. (1946)50c

Handbook of Fertilizers, by A. F. Gustafson. Source, composition, effects and application of commercial fertilizers. 172 p., revised edition. (1944)\$2.00

Pruning Trees and Shrubs, by E. P. Felt. Besides discussing general practices, gives specific advice on pruning trees, shrubs, hedges and fruits, line clearance and tree repair. 236 p., illus. (1941).....\$2.50

Crab Apples for America, by Donald Wyman. Discusses breeding, propagation, diseases and insect pests. Suggests best varieties for flowerers, fruits and economic purposes. 81 p. (1943)\$1.00

How to Landscape Your Grounds, by L. R. Johnson. Definite and direct suggestions for the homeowner. Planting plans and keys adapted to various sections of the country. Select lists of shrubs, acid soil plants, trees and vines. 221 p. (1941).....\$3.50

Diseases and Pests of Ornamental Plants, by Dr. Bernard Dodge and W. L. Rickett. Besides general chapters on diseases, insects and control measures, describes pests affecting some 600 species of plants in alphabetical order. 638 p. Illus. Revised edition (1948).....\$6.00

Azaleas and Camellias, by H. H. Hume. Contents: The camellias and their varieties, propagation, camellias and azaleas in the garden, soils and their preparation, planting, cultivation, care, feeding, growing in pots and tubs, pests and troubles. 90 p., illus. (1931).....\$2.00

Roses of the World in Color, by J. Horace McFarland. Third edition, completely revised. Guide to varieties with cultural data and suggestions for treatment of some of the outstanding novelties and of oldtime varieties. 283 color illus. 296 p. (1947).....\$5.00

Spray Chemicals and Application Equipment. By J. A. McClintock and Wayne B. Fisher. Discusses methods of using spray chemicals, insects and diseases controlled by specific chemicals and methods of improving present pest control practices. Describes sprayers and dusters now available. About 500 illus., 320 p. 3rd edition (1949).....\$6.25

Manual of Cultivated Trees and Shrubs, by Alfred Rehder. Invaluable handbook, completely revised and enlarged. 1000 p. (1940).....\$12.00

Hortus Second, compiled by L. H. and E. Z. Bailey. Brings *Cyclopedia of Horticulture* up to date in condensed form. 778 p. (1941).....\$7.50

Maintenance of Shade and Ornamental Trees and Shrubs, by P. P. Pirone. Up-to-date, original and comprehensive—on pruning, surgery, pest control and other care. 436 p. (1948).....\$6.50

Lilacs for America, by John C. Wister. Recommends 100 varieties for general planting. Gives complete color classification of over 500 kinds of lilacs. 64 p. (1943).....\$1.00

Landscaping the Home Grounds, by L. W. Ramsey. Elementary design and planting. Pen sketches, charts and text show the reader how to beautify his home. 169 p., 76 half-tones and 99 sketches. (1930).....\$3.00

Narrow-leaved Evergreens, by L. C. Chadwick. Selection of superior varieties of trees and shrubs, vines and ground covers. Lists uses, culture, growth, habits and characteristics for landscape purposes. 64 p. (1941).....50c

The Book of Shrubs, by Alfred C. Hottes. Tells how and when to plant, prune and spray and gives various lists of shrubs for many uses. Covers propagation, transplanting, pruning, soil requirements, etc. 438 p. Fourth edition. (1942)\$4.00

Planting Design, by Florence B. Robinson. Modern and practical treatment of theories of landscape composition. Chapters cover color theory, use of color, texture, mass grouping, planting about buildings and public plantings. 215 p. Illustrated by sketches. (1940).....\$3.00

Tree Experts' Manual, by Richard R. Fenska. Reference book on diagnosis of tree troubles, fertilizing, transplanting, pruning, surgery, diseases, insects, spray materials, etc.—handy information for daily operations of commercial tree expert. 192 p., 65 illus. (1943).....\$5.00

Hardy Chrysanthemums, by Alex Cumming. Discusses selection of varieties for different purposes, soils and fertilizers, pruning and disbudding, winter protection, propagation, hybridizing, cloth shading, diseases and pests. 202 p., 45 illus. (Revised 1945).....\$2.50

Propagation of Trees, Shrubs and Conifers, by Wilfrid G. Sheat. Gives concise data on English propagating methods. Discusses the propagation of ornamental trees and shrubs, giving exclusive attention to commercial practices. Includes every well known genus, with propagation of particular species and varieties described individually where necessary. 479 p. (1948) \$7.50

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Heavily Budded, B&B.
Excellent material for forcing or spring
sales. Orders booked now for immediate or
spring delivery.

	Each	Per 3	Per Doz.
12 to 15 ins.	\$2.00	\$5.75	\$20.00
15 to 18 ins.	2.75	7.75	27.50
18 to 24 ins.	3.00	8.50	32.00
24 to 30 ins.	4.50	12.50	45.00

Bare root, but not shaken out cleanly; balls
contain some soil. This stock is fine for
potting up in 5 and 6-in. pots for forcing
or potting in Cloversets for roadside sale.

Per Doz. Per 100
10 to 12 ins., bushy with buds. \$12.50 \$ 95.00
12 to 15 ins., bushy with buds. 15.00 115.00
Lining-out sizes; plants have small ball.

Per 100 Per 1000
6 to 8 ins., from frame. \$35.00 \$325.00
8 to 10 ins., from frame. 45.00 425.00
transplanted, field-grown. 75.00

THE WAYSIDE GARDENS CO., Mentor, Ohio

AZALEA LINERS.

Now ready from outdoor beds. Were
planted from rooted cuttings in May and
June, this year. Have been sheared back
twice. Strong, bushy plants.

AZALEA INDICA
Pride of Mobile, watermelon-pink
India Elegans, very early, clear pink
Daphne Salmon, salmon-pink
President Clay, brick-red

AZALEA KURUME
Coral Bells, hose-in-hose, coral-pink
Snow, hose-in-hose, pure white
Hinodigiri, compact, bright red
Christmas Cheer, hose-in-hose, deep red
Sweetheart Supreme, hose-in-hose, bluish-pink
\$10.00 per 100; \$90.00 per 1000.

Shipment by express. Cash with order, or
C.O.D.

IBSEN'S WHOLESALE NURSERY
202 Government St. Mobile, Ala.

AZALEAS.

Thousands of beautiful, well budded,
excellent color, field-grown Kurumes, Christmas
Cheer, Coral Bells, Hinodigiri, Hexe, Pink
Pearl, Salmon Beauty, Snow. Easy trucking
distance to New York and other eastern
points, but we ship anywhere. Satisfied cus-
tomers in 12 states.

	Each	Each
6 to 8 ins.	\$0.70	\$0.65
8 to 10 ins.	.90	.85
10 to 12 ins.	1.15	1.00
12 to 15 ins.	1.50	1.30

Packing additional. Burlapping, 10c each
extra. 250 at 1000 rate. Order today while
they last, and send for complete list.

TANKARD NURSERIES
Exmore, Va.

AZALEA TRANSPLANTS.
3 to 5 ins., well branched, Hinodigiri,
Pink Pearl, Hinomayo, Snow, Ledifolia alba,
Magnifica, Coral Bells, Amoenae and choice
mixed. Ready in May. \$15.00 per 100. Pack-
ing free. Cash with order.

BUCKINGHAM NURSERY
Box 144 Buckingham, Pa.

ROOTED CUTTINGS.
\$6.00 per 100; \$50.00 per 1000.
Coral Bells, Hinodigiri, Hexe, Sherwood,
Snow, Ledifolia Alba, Sweetheart Supreme,
Sweet Briar, Gardenia Supreme, Hinomayo,
Orange Coral Bells, Hino Crismon, Amoenae.

JOHN WIGMORE
Norman Ave. Riverside, N. J.

AZALEA MOLLIS HYBRID.
Grown 2 years in peat beds. 5 per cent
orange, 95 per cent pink, red, bronze, yellow,
few white. Mixed only. 6 to 9 ins., 35c ea.;
9 to 12 ins., 60c ea.

JOSEPH F. MARTIN CO. Painesville, Ohio

BERRY PLANTS

PINWELL and SCHWAB GOOSEBERRIES.
LATHAM and CHIEF RASPBERRIES.
Pixwell Gooseberries, leading variety, 2-yr.,
heavy, \$25.00 per 100; 2-yr., light, \$15.00 per
100. Schwab Gooseberries, new seedling
(world's largest Gooseberry), berries often
1½ ins. in diameter, highest quality, hardy,
very productive, etc. 1-yr., heavy \$6.50 per 10;
1-yr., light, \$5.00 per 10. All Raspberries,
No. 1, heavy, \$40.00 per 1000, 10 per cent
discount for cash on all stock. All plants that
die, replaced at ½ price.

SCHWAB FRUIT FARM & NURSERY
220 N. Fifth St. Mankato, Minn.

GEM EVERBEARING STRAWBERRY
PLANTS.

Guaranteed true to name and free of
mixed varieties. Choice northern-grown, No.
1 plants. Booking orders now for spring deliv-
ery. \$10.00 per 1000, F.O.B. Prepared to
fill mail orders on these and other varieties
using your lists. Write for details.

DAVIS PLANT FARM
Hamilton, Mont.

RASPBERRIES, 100,000 TAYLOR RED.

No. 1 suckers, \$30.00 per 1000
No. 2 suckers, \$25.00 per 1000

We have grown raspberries for over 50
years. We consider this the best of all the
red raspberries. Plants are strong-growing,
free from disease. Berries are large and firm.
500 at 1000 rate, samples free.

RATHBUN NURSERY CO.
Angola, Ind.

RASPBERRIES, 50,000 No. 1 Morrison
blackcap tips, \$30.00 per 1000. For late fall
or early spring shipment.

Victoria ruburab and Mary Washington
asparagus. Let us quote you on your re-
quirements.

ASHCRAFT NURSERY
Cemish, Mich.

RASPBERRY PLANTS.

	Per 1000
Latham or Taylor Red	\$30.00
No. 1 suckers	40.00
1-yr., No. 1 transplants	40.00
Cumberland and Logan Black tips	30.00
Morrison Black	35.00
Columbian and Potomac Purple tips	35.00

C. H. BENEDICT Grand Junction, Mich.

STRAWBERRY PLANTS.

Double insected Aroma, Blakmore, Klondike,
Missionary, Dunlap, Klommore, Gem
Supreme, \$5.00 per 1000. Gem Everbearing,
\$10.00; Progressive, \$8.00; Tenn. Beauty,
\$6.00. Prompt shipment.

TOM RAMSEY
Harrison, Tenn.

STRAWBERRY PLANTS — All leading
overbearing varieties. Northern-grown, No. 1
plants: Gem, Streamliner, Minnesota 1156,
Utah Centennial, New Progressive, Superfection,
Twentieth Century and Bruner's Marvel.
Write for wholesale price list.

MENEAL BERRY NURSERY
Hamilton, Mont.

STRAWBERRIES.

Strawberry plants. Certified double insected,
Missionary, Blakmore, Klondike, Aroma,
Dunlap, \$5.00 per 1000. Gem Everbearing,
\$10.00 per 1000. Progressive Everbearing,
\$9.00 per 1000.

WARREN H. LACKEY Harrison, Tenn.

ROCKHILL EVERBEARING STRAW-
BERRY PLANTS — Generous-size divisions.
No packing charge. Priced \$5.00 per 1000,
F.O.B. Silverton. Terms: Cash with order.

ABIQUA GARDENS
Rt. 2, Box 159 Silverton, Ore.

BLUEBERRY PLANTS. Specializing in
cultivated improved hybrids. Inquiries in-
vited.

HARTMANN'S PLANTATION
Grand Junction, Mich.

ROCKHILL RUNNERLESS STRAW-
BERRY PLANTS, everbearing. First-quality
stock, freshly dug: 100, \$5.00; 500, \$22.50;
1000, \$40.00, postage paid. Immediate ship-
ment. Cash, please. G. E. LANTZ, Sixes, Ore.

BULBS AND TUBERS

HARDY NORTHERN-GROWN LILY BULBS.
New, rare, scarce and unusual as well as
standard varieties.

New wholesale list now ready.

Send for your free copy.

J. HENDRIKS, Grower Portage, Mich.

Send post card for catalog of over 100
varieties of imported Holland tulips, daffodils
and other bulbs. Prices are low, shipments
prompt.

OLD ORCHARD GARDENS
724 E. Big Bend Rd. Webster Groves 19, Mo.

DOUBLE TIGER LILIES.
The EVERGREEN NURSERIES, Lowell, Ind.

HEMEROCALLIS.

We offer fine, clean, healthy stock, true-to-
name, at these bargain prices.

	Per 10
Antoinette	\$ 7.50
Brunette	6.00
Cramore Henna	10.00
Dorothy McDade	6.00
Golden Dawn	7.50
Golden West	6.00
Grace	20.00
Granada	7.50
Heather Rose	15.00
Hope	5.00
Hyperion	2.50
Linda	2.50
Mary Stoker	2.50
Minnie	7.50
Minuet	12.00
Morocco Red	12.50
Southern Queen	10.00
Welcome	10.00
Patricia	3.00

Cash with order, please.
PARRY NURSERIES, Signal Mountain, Tenn.

HOLLAND-GROWN BULBS.

CLOSE-OUT SALE.

Hyacinths, 16 to 17 cm., \$9.00 per 100.
Gertrude (pink), Bismarck (blue), L'Inno-
cence (white).

Tulips, 11 to 12 cm., \$4.50 per 100. Mixed,
\$4.50 per 100.
Red, yellow, lavender and pink.

BENTON COUNTY NURSERY CO., Inc.
Rogers, Ark.

CAMELLIAS

SPECIAL PRICE ON CAMELLIA LINERS
FOR QUICK SALE.

There is no quarantine on our stock or
soil, and we are free to move stock and
soil without fumigation or washing.

It is best to transplant liners as early in
the fall as possible so the roots can become
established for an early Spring growth.

STANDARD VARIETIES.

Alba Plena, Brilliant, Chandleri Elegans,
Dark Cheerful, Pink Perfection, Prof. Sar-
gent and 200 additional varieties:

8 to 10 ins.	30c each
12 to 18 ins.	45c each

RARE VARIETIES.

Adolph Audusson, Alba Superba, C. M.
Hevey, Glen 46, La Reine, Purple Dawn,
Woodville Red and 150 additional varieties:
8 to 10 ins. 75c each
12 to 18 ins. 95c each

Write for catalog. Remittance with order.

NATIONAL NURSERIES
Dept. A Biloxi, Miss.

BLOOMING-SIZE CAMELLIAS.

40 Fine Varieties—Some to 3½ ft.
MANY WITH FLOWER BUDS.
Priced from \$2.75 to \$7.50. DELIVERED.

Shipped in paper pots ready to slip into
clay pots for immediate sale or for bench-
ing for corsage flower production—ALSO
POT-GROWN CAMELLIAS.

1 AND 2-YEAR PLANTS
OF THE BETTER KINDS.

35c to 60c. DELIVERED.

WE PAY THE EXPRESS AND PACK FREE.

Safe delivery and satisfaction guaranteed.

WRITE FOR LIST
SHOWING VARIETIES AND SIZES.

TORMEY'S
632 S. Baldwin Ave. Temple City, Calif.

Wholesale Growers of Fine Camellias.
For 15 years—The Best from the Far West.

EVERGREENS

COLORADO BLUE SPRUCE.

Highest Quality Liners and Finished Trees.
PRICES EACH. Order lots 10 to 50 for
delivery to customer's truck or full truck or
carloads, F.O.B. Nursery. Add packing
charges for small lots requiring packing and
crating.

Trans-	Sizes	Silver	Med.	Packing
planted	ins.	Blues	Blues	Greens

BARE ROOTS, wrapped in wet moss:

X 4 to 8 (Bed run only)	\$0.10	\$0.01
XX 6 to 12 (Bed run only)	.23	.03
XXX . . . 12 to 18	\$1.65	\$0.75
XXX . . . 18 to 24	2.20	1.10
XXX . . . 24 to 30	2.20	1.10

BALLED & BURLAPPED or Clovered Pots:

XXX . . . 12 to 24	1.70	.80	.39
XXX . . . 18 to 24	2.30	1.20	.80
XXX . . . 24 to 30	2.90	1.60	1.10

CUT CHRISTMAS TREES:

XXX . . . 12 to 18	1.55	.65	.35	.04
XXX . . . 18 to 24	2.08	.98	.58	.08
XXX . . . 24 to 30	2.65	1.35	.85	.15

Quantity discounts on tree prices and pack-
ing charges; 5 per cent for orders for 51 to
500 trees, 10 per cent for orders for over
500 trees.

Ask for our **WANT LIST.**
We try to buy from our customers.

These revised prices effective Sept. 1, 1949.
H. W. WEBER
16 Summer Street Weston 93, Mass.

(Continued from previous column.)

	Each per 100
<i>Ilex crenata</i> .	
2 1/4-in. pots	\$0.15
<i>Ilex crenata rotundifolia</i> .	
2 1/4-in. pots	.15
<i>Jasminum floridum</i> .	
4 to 6 ins., liners	.06
6 to 8 ins., liners	.08
*2 1/4-in. pots	.10
<i>Magnolia grandiflora</i> .	
2 1/4-in. pots	.10
2 1/2-in. pots	.12
<i>Nandina domestica</i> .	
2 1/4-in. pots	.10
2 1/2-in. pots	.12
<i>Pyracantha bella</i> .	
*2 1/4-in. pots	.20
<i>Virburnum tinus</i> .	
3 to 4 ins., liners	.05
4 to 6 ins., liners	.06
6 to 8 ins., liners	.08
<i>Berberis thunbergii</i> (stropurpurea).	
4 to 6 ins., rooted cuttings	.05
6 to 8 ins., rooted cuttings	.06
8 to 12 ins., rooted cuttings	.18
2 1/4-in. pots	.12
<i>Buddleia de France</i> .	
6 to 8 ins., liners	.06
8 to 12 ins., liners	.08
<i>Forsythia spectabilis</i> .	
2 1/4-in. pots	.10
<i>Magnolia soulangeana nigra</i> .	
2 1/2-in. pots	.35
15 to 18 ins., rooted layers	.50
12 to 18 ins., transplants	.75
<i>Prunus glandulosa</i> .	
4 to 6 ins., liners	.06
<i>Spiraea Anthony Waterer</i> .	
4 to 6 ins., liners	.05

5 to 8 in. liners. marked by asterisk (*) above available only for spring, 1950, delivery. All items not so marked can be delivered either fall, 1949, or spring, 1950, at such time as the customer desires. For this. For the prices at which our potted liners are quoted they will be shipped to you in New Red Neponset Paper Pots. This method of shipping in paper pots allows the plants to retain moisture and keeps the root ball intact. Of course, stock packed and shipped in this manner costs a little more money, but the insurance it gives your nursery rows are more than worth it. Trial will positively convince

T. G. OWEN & SON, Inc.
Columbus, Miss.

LINERS.
 Ring Delivery

Spring Delivery		Each
Azalea Mollis, cream, branched, XX, 6 to 9 ins. fd.		\$0.21
Camellia, Hermé, 2½-in. pot.		.20
Camellia, Cheerful, 2½-in. pot.		.20
Daphne		.10
Odora, X		.10
Cneorum, X		.12
Mezereum, 4 to 6 ins. fd.		.07
Mezereum, 6 to 8 ins. fd.		.10
Mezereum, 8 to 10 ins. fd.		.12
Heather		.10
Bruckenthalia, XX, 2 to 4 ins. frame		.12
Med. White, XX, 2 to 4 ins. frame		.12
Med. Red, XX, 2 to 4 ins. frame		.12
St. Kaverna, XX, 2 to 4 ins. frame		.12
Carnae, X, flat		.12
Mediterranea Hybrid, X, flat		.12
Villa, X, flat		.12
King George, X, flat		.12
Springwood White, X, flat		.12
Thuja woodwardi, X, frame		.12
Thuja pyramidalis, X, frame		.12
Viburnum burkwoodi, X, 6 to 8 ins.		.17
Viburnum burkwoodi, X, 6 to 8 ins.		.17
Lithospermum (Heavenly Blue) X, pot.		.12
F.O.B. Nursery, packed free, C.O.D.		
FOUR STAR NURSERY		
Hi-way 99 at No. 12th		
Edmonds, Wash.		

LINING-OUT STOCK.

	Per 100	Per 1000
ARBORVITAE		
Chinese Pyramid, 1-1, 3 to 8 ins.	\$5.00	\$45.00
Dwarf Oriental, 1-1, 3 to 8 ins.	6.00	45.00
Chinese, 1-1, 3 to 8 ins.	5.00	45.00
Chinese, 1-0, 3 to 6 ins.	5.00	25.00
SPRUCE		
Norway, 2-0, 2 to 6 ins.	2.50	20.00
Norway, 2-1, 2 to 6 ins.	4.00	35.00
Black Hills, 2-1, 2 to 4 ins.	4.00	35.00
Black Hills, 2-1, 2 to 4 ins.	4.00	40.00
Colorado Blue, 2-1, 1 to 2 ins.	4.00	35.00
Colorado Blue, 3-1, 3 to 6 ins.	5.50	50.00
Black, 2-1, 2 to 6 ins.	4.00	35.00
Black, 3-1, 6 to 10 ins.	5.00	45.00
PI		
Mugho, 2-0, 2 to 4 ins.	3.00	25.00
Table Mountain, 1-0, 2 to 4 ins.	2.50	20.00

2 per cent for cash v

JOHN G. ZELENKA
R. 2, Box 293 Grand Haven, Mich.

LINING-OUT STOCK.
EVERGREENS. POTTED

	Pot size	Per 100
<i>Taxus cuspidata</i>	2 1/2-in.	\$22.50
<i>Taxus hicksii</i>	2 1/2-in.	25.00
<i>Thuja pyramidalis</i>	2 1/2-in.	20.00
<i>Thuja pyramidalis</i> , Imp.	2 1/2-in.	20.00
<i>Thuja woodwardii</i>	2 1/2-in.	17.50

SHRUBS.
 num burkwood! 2 1/2 -in.
 h with order, packing without c
 The HOLLANDIA GARDENS
 South Vienna, Ohio

Seedlings			
	Per 100	Per 1000	
<i>Acer palmatum</i> , 3 to 6 ins.	\$5.00	\$45.00	
<i>Acer palmatum</i> , 8 to 12 ins.			
transplanted understock	8.00	75.00	
<i>Euconymus alatus</i> , 3 to 5 ins.	5.00	45.00	
<i>Fagus sylvatica</i> , 10 ins.	8.50	75.00	
<i>Fagus sylvatica purpurea</i> , 8 to 10 ins.	15.00		
<i>Juniperus virginiana</i> , 2 to 4 ins.	5.00	40.00	
<i>Larburnum anagyroides</i> , 4 to 8 ins.	3.50	30.00	
<i>Magnolia glauca</i> , 2 to 4 ins.	4.00	35.00	
<i>Picea excelsa</i> , 6 to 8 ins.	5.00	45.00	
<i>Picea pungens glauca</i> , 3 to 4 ins.	5.00	45.00	
<i>Pinus flexilis</i> , 2 to 3 ins.	4.00	35.00	
<i>Pinus mugo</i> , 4 to 6 ins.	6.00	40.00	
<i>Pinus mugo</i> , 6 to 8 ins.	7.50	60.00	
<i>Pinus nigra austriaca</i> , 4 to 6 ins.	6.00	50.00	
<i>Pinus strobus</i> , 4 to 6 ins.	4.00	35.00	
<i>Pinus sylvestris</i> , 4 to 6 ins.	4.00	35.00	
<i>Pseudotsuga douglasii</i> , 6 to 8 ins.	5.00	45.00	
<i>Pseudotsuga douglasii</i> , 8 to 12 ins.	7.50	60.00	
<i>Taxus cuspidata capitata</i> , 3 to 6 ins.	10.00	90.00	
<i>Taxus cuspidata capitata</i> , 6 to 8 ins., tr.	20.00		
<i>Thuja occidentalis</i> , 4 to 6 ins.	4.50	40.00	
<i>Thuja orientalis</i> (understocks), 8 to 10 ins., tr.	7.50	60.00	
<i>Thuja canadensis</i> , 6 to 8 ins., tr.	12.00	100.00	
Twice transplanted cuttings from beds			
<i>Juniperus communis hibernica</i>	\$2.25	\$20.00	
<i>Juniperus communis suecica nana</i>	2.25	20.00	
<i>Taxus media</i> , spreading	2.75	25.00	
<i>Taxus media cliforti</i>	2.75	25.00	
<i>Taxus media hatfieldi</i>	2.75	25.00	
<i>Taxus media hickel</i>	2.75	25.00	
<i>Taxus media Moenchii columbiana</i>	2.75	25.00	
<i>Taxus media ovata</i>	2.75	25.00	
<i>Taxus media Vermeulen</i>	2.75	25.00	

Well established cuttings from 2 1/2-in. pots	
	Per 10 Per 100
<i>Andromeda japonica</i>	\$1.75 \$15.00
<i>Euonymus carrierei</i>	1.75 15.00
<i>Ilex crenata</i> blairii	1.75 15.00
<i>Ilex crenata</i> helleri	1.75 15.00
<i>Ilex glabra</i>	1.75 15.00
<i>Juniperus communis</i> hibernica ..	1.75 15.00
<i>Juniperus communis</i>	
<i>suecica nana</i>	1.75 15.00
<i>Juniperus depressa</i> plumosa ..	1.75 15.00
<i>Juniperus excelsa</i> stricta	1.75 15.00
<i>Juniperus horizontalis</i>	1.75 15.00

<i>Juniperus horizontalis</i>	1.75	15.00
<i>Juniperus horizontalis</i>	1.75	15.00
<i>Juniperus horizontalis</i>	1.75	15.00
<i>Juniperus pfitzeriana</i>	2.25	20.00
<i>Taxus baccata repandens</i>	1.75	15.00
<i>Taxus cuspidata</i>	1.75	15.00
<i>Taxus cuspidata</i>	2.25	20.00
<i>Taxus cuspidata nana</i>	1.75	15.00
<i>Taxus media browni</i>	1.75	15.00
<i>Taxus media henryi</i>	1.75	15.00
<i>Taxus media hicksii</i>	1.75	15.00
<i>Taxus media Moon's columnaris</i>	1.75	15.00
<i>Taxus media nana</i>	1.75	15.00
<i>Taxus media Vermeirei</i>	1.75	15.00
<i>Thuja occidentalis globosa</i>	1.75	15.00
<i>Thuja occidentalis globosa</i>	1.75	15.00
<i>Thuja occidentalis globosa</i>	1.75	15.00
<i>Thuja occidentalis lutea</i>	1.75	15.00
<i>Thuja occidentalis lutea</i>	2.00	17.50
<i>Thuja occidentalis pyramidalis</i>	1.75	15.00

TRANSPANTS. LINING-OUT STOCK

	100	1000
Colo. Blue Spruce, X, 4 to 8 ins.	1.00	\$30.00
Colo. Blue Spruce, X, 3 to 6 ins.	7.50	65.00
White Spruce, X, 6 to 12 ins.	10.00	90.00
White Spruce, X, 4 to 6 ins.	5.00	45.00
Norway Spruce, X, 2 to 4 ins.	4.00	30.00
Balsam Fir, X, 6 to 12 ins.	8.00	
Balsam Fir, X, 4 to 6 ins.	5.50	
Canada Spruce, X, 4 to 12 ins.	8.00	75.00
Canadian Hemlock, X, 4 to 8 ins.	7.50	60.00
American Arborvitae, X,		
4 to 10 ins.	8.00	75.00
Musko. Fir, X, 4 to 6 ins.	5.00	40.00
Scotch Pine, X, 3 to 6 ins.	4.50	35.00
American Red Pine, X,		

6 to 12 in. 8.00
Prices F.O.B. nursery, packed in damp
moss. Packed free for cash with order. Nice
stock. Write for complete price list.

SUNCREST EVERGREEN NURSERIES
Box 643 Johnstown, Pa.

NEW CATALOG.
Fall, 1949—Spring, 1950, descriptive, illustrated catalog listing many varieties of Azalea.

grasses, Conifers, Heathers, etc., available in rooted cuttings and field transplants grown in sandy soil. Write for your copy now if

you haven't received one.

MITSCH NURSERY
Wholesale Propagators and Growers of

Evergreen Liners,
Aurora, Ore.

FIELD-GROWN TRANSPLANTS.
From selected cuttings, best strain.
Taxus cuspidata capitata. Per 100 Per 1000

12 to 18 ins.....	\$60.00	\$550.00
18 to 24 ins.....	70.00	650.00

Also B&B Taxus, upright and spreading in

BULK'S NURSERIES, Inc. Babylon, L.I., N.Y.

1. The first part of the paper is devoted to the study of the asymptotic behavior of the solutions of the system (1) as $t \rightarrow \infty$. It is shown that the solutions of the system (1) tend to zero as $t \rightarrow \infty$ if and only if the matrix A is Hurwitz. This result is obtained by using the method of the variation of constants.

EVERGREENS—Continued

POT-GROWN LINERS.

Two-year pot-grown liners, ready for field. Stop field loss; plant stock with pot ball. All offerings grown two years in 2½-in. pots.

	Per 100
1000 Euonymus vegetus	\$20.00
2000 Euonymus patens	20.00
2000 Ilex rotundifolia	25.00
2000 Thuja pyramidalis	25.00
3000 Biota aurea nana	30.00
500 Hemlock	35.00
2000 Juniper, Pfitzer (regular)	30.00
3000 Juniper, Pfitzer (Nick's Compact)	30.00
2000 Juniper, Irish	25.00
1000 Taxus intermedia	30.00
1000 Taxus hicksii	25.00
3000 Taxus cuspidata	25.00
1000 Taxus capitata (leader cuttings)	30.00
500 Juniper, Dundee, grafts	40.00

NICK'S NURSERY
(Near Louisville) Anchorage, Kentucky

SEQUOIA SEMPERVIRENS.
(California Redwood.)

Well established stock.
In 2½-in. pots.
\$15.00 per 100. F.O.B. Monrovia

MONROVIA NURSERY CO.
P. O. Box 196 Monrovia, Calif.

QUALITY LINERS.

	Per 100
Taxus capitata, 4 to 6 ins., tr.	\$22.50
Franklinia (rare), 8 to 12 ins.	25.00
Canadian Hemlock, 8 to 12 ins., tr.	15.00
Red-flg. Dogwood, 10 to 15 ins., grafts	60.00
Magnolia a. nigra (red), 8 to 15 ins.	75.00
Aronia arbutifolia, 8 to 15 ins., tr.	15.00
Berberis Julianae, 4 to 6 ins., tr.	25.00
Red Jap. Maple, 6 to 15 ins., grafts	75.00
Pfitzer Juniper, 4 to 6 ins., tr.	22.50
Chinese Chestnut, 15 to 24 ins.	25.00
Austrian Pine, 6 to 8 ins.	10.00
Ilex glabra, 4 to 6 ins., tr.	22.50

Send for new Fall List.
POSSUM HOLLOW NURSERIES
6327 Magnolia St. Philadelphia 44, Pa.

JUNIPERUS VIRGINIANA.
GRAFTING UNDERSTOCKS.

We have a really nice batch of these plants in two grades, the first mechanically transplanted under irrigation on 2-ft. rows; the second potted last year and established for immediate grafting. Both can be shipped with a "B" certificate.

Selected pencil thickness, B.R., \$50.00 per 1000.

Established understocks from pots, pot balls individually wrapped, \$100.00 per 1000.

KOSTER NURSERY
Bridgeton, N. J.

EXTRA-HEAVY TRANSPLANTS.
Ready for field.

	Per 100
Taxus cuspidata, 2-yr., 10 to 12 ins., T.	\$30.00
Taxus cuspidata, 3-yr., 12 to 15 ins., T.	40.00
Taxus capitata, 2-yr., 10 to 12 ins., T.	35.00
Taxus capitata, 3-yr., 12 to 15 ins., T.	40.00
Taxus hicksii, 2-yr., 10 to 15 ins., T.	35.00
Taxus Vermelien, 10 to 12 ins., T.	35.00
Taxus cuspidata, 2-yr., 2½-in. pots	23.00
Taxus capitata, 2-yr., 2½-in. pots	25.00

STROHL'S NURSERY
1404 No. Anthony Fort Wayne, Ind.

PFITZER JUNIPERS.

Well established in 2½-in. pots for immediate or future delivery at \$12.50 per 100 or \$110.00 per 1000. Write for our wholesale price list.

COTTAGE HILL NURSERY
T. Kiyono, Mgr.

Rt. 2, Box 67-B Mobile, Ala.

LANDSCAPE EVERGREENS.

Beautiful specimen American Arborvitae, green leaved, dense foliage, 4 to 6 ft. Globe Arb. up to 30 ins. Pyramidal Arb. 3 to 4 ft. Spiny Greek, 2 to 3½ ft. Colorado Spruce, Norway Spruce, etc. Come, see and dig.

THE KINDIG NURSERY Elkhart, Ind.

EVERGREENS.

Exceptionally nice 2-yr. field-grown Juniperus glauca, burki, Dundee and canari. All grafted on Virginiana understock. \$1.25 each, B&B, F.O.B. nursery.

PAUL ARTERBURN NURSERY
Box 72 St. Matthews, Ky.

EVERGREENS.

Taxus cuspidata (Spreading yew).
3-year bedded liners, 10 to 12 ins., ready for field planting, \$30.00 per 100, \$250.00 per 1000.

NICK'S NURSERY
Near Louisville Anchorage, Ky.

CHINESE ARBORVITAE SEEDLINGS.

Grafters, 1/8 to 3/8-in. cal., 7c each.
1-yr. edgcs., 6 to 10 ins., \$50.00 per 1000.
2-yr. edgcs., hedge size, 18 to 24 ins., 10c each.
LUKE NURSERY, Pauls Valley, Okla.

DOUGLAS FIRS.
8 to 12-inch Douglas Fir.
\$7.50 per 100, \$60.00 per 1000.
COASTAL GARDENS Sheridan, Ore.

FRUIT TREES

FRUIT AND NUT TREES.

PEACH TREES. Sizes and varieties below:

	Each	Each
1-in. and up, 6 to 7 ft.	\$0.35	2 to 3 ft., \$0.12½
11/16-in., 5 to 6 ft.	.30	18 to 24 ins., .10
9/16-in., 4 to 5 ft.	.25	12 to 18 ins., .08
7/16-in., 3 to 4 ft.	.20	

Ambergem	Hiley Belle
Belle of Ga.	Redbird
Champion	Rocheater
Early Rose	Shepherd's Late Red
Elberta	J. H. Hale
Late Elberta	Heath Cling
Early Elberta	Indian Red
Florida Jewel	Mayflower
Golden Jubilee	Redhaven
Halehaven	Southaven

APPLE. 2-yr., branched. 1-yr., whips

	Each	Each
1-in. and up, 6 to 7 ft.	\$0.40	4 to 5 ft., \$0.25
11/16-in., 5 to 6 ft.	.35	3 to 4 ft., .20
9/16-in., 4 to 5 ft.	.30	2 to 3 ft., .15

Anoka
Cortland
Delicious, Dark Red
Delicious, Yellow
Grimes Golden
Jonathan, All Red
5-N-1 MULTIPLE VARIETY APPLE: 2-yr., branched: 9/16-in., \$0.75 ea 7/16-in., \$0.65 ea.
APRICOT—PLUM—PRUNE—DAMSON—NECTARINE.

	Each	Each
6 to 7 ft.	\$0.55	3 to 4 ft., \$0.25
5 to 6 ft.	.45	2 to 3 ft., .20
4 to 5 ft.	.35	18 to 24 ins., .15

Superb Apricot
Moorpark Apricot
Early Golden Apricot
Red June Plum
Bruce Plum
Abundance Plum
STUART PECAN TREES, 2 to 3 ft., 90c ea.
18 to 24 ins., 75c ea.
CUMBERLAND VALLEY NURSERIES, Inc.
Box 305 McMinnville, Tenn.

APPLES, 2-yr.
3 to 4 ft., 20c ea.; 4 to 5 ft., 30c ea.;
5 to 6 ft., 35c ea.

Summer Champion, Lodi, Ben Davis, Blood Red Delicious, Blood Red Jonathan, Yellow Delicious, Blood Red Stayman, Yellow Transparent.

3-yr. GRAFTS
3 to 4 ft., 25c ea.; 4 to 5 ft., 35c ea.;
5 to 6 ft., 40c ea.

Summer Champion, Ben Davis, Winesap, Early Harvest, Redbird, Blood Red Jonathan, Lodi, Blood Red Stayman, Red June, Blood Red Delicious, Maiden Blush, Yellow Transparent, Horse, Yellow Delicious, Delux, Turkey, Mammoth Black Twig, Anoka, Black Ben Davis, Arkansas Black, Blood Red Rome Beauty, Ada Red, Dolgo Crab, Florence Crab.
Extra-nice, well branched trees. Good calliper.

BENTON COUNTY NURSERY CO., Inc.
Rogers, Ark.

FRUIT TREES.

A few thousand 3-year-old Apple: Jonathan, Double Red Jonathan, Yellow Delicious, Red Delicious, York, Turkey, Wealthy, Rome Beauty, Double Red Rome Beauty, Grimes—11/16-in., 35c; 1 to 1½-in., 75c; 1½ to 1¾-in., \$1.15 each. In 1000 lots.

A few hundred Pear: Seckel, Duchess, Bartlett—1-in., 85c; 1¼-in., \$1.25 each. In 1000 lots.

5000 Amur River North Privet, cut back, many branches, 18 to 24 ins., 7½c; 2 to 3 ft., 9½c; 3 to 4 ft., 13c each, in 1000 lots.

3000 Hansen Dwarf Cherry, 3-yr., heavy, 3 to 4 ft., 30c each in 1000 lots.

EGYPTIAN NURSERY & LANDSCAPE CO.
Farina, Ill.

CALAMONDIN.
LIMEQUAT.
KUMQUAT.
LEMON.
ORANGES, assorted varieties.
GRAPEFRUIT, assorted varieties.
SATSUMA.

	Each
8-in. pots	\$2.00
10-in. painted cans	3.00
16-in. green tubs	\$5.50 to 7.50
20-in. green tubs	8.00 to 10.00

GLEN SAINT MARY NURSERIES CO.

Glen Saint Mary, Fla.

PECANS.

Stuart, Mahan, Success, Money-maker, Moore, Burkett, Schley, Western Schley and other popular and profitable catalog items. Thomas Black and Willson Wonder. English Walnuts, Eureka and Tanenashi Persimmon, Everbearing Fig. Trees. Write for advance trade list.

ARP NURSERY CO.

Box 867 Tyler, Texas

CHERRIES—Good height—well branched.

MONTMORENCY.

Size 9/16-in., 60c ea. Size 11/16-in., 70c ea.

BENTON COUNTY NURSERY CO., Inc.

Rogers, Ark.

FRUIT AND NUT TREES of all kinds.

Write for wholesale list. Frank FITZGERALD'S NURSERY, Stephenville, Tex.

We offer for fall, 1949, our usual supply of nursery stock.

Apple	Peach	Pear
Plum	Cherry	Apricot
Fig	Grape	Quince buds
		Pecan

Also ornamental and shade trees.

Send us your want list.

Write for prices.

JOPPA NURSERY CO.

Joppa, Ala.

GROUND COVERS

VINCA MINOR (Hardy Myrtle).
Have several hundred thousand made up. Large clumps, 20 to 30 canes, well rooted. Prompt shipment, \$4.00 per 100, \$35.00 per 1000.

R. F. D. 2 H. C. WAUGH Cheshire, Ohio

PACHYSANDRA TERMINALIS.

1-yr., field-grown..... Per 1000

2-yr., field-grown..... \$61.00

Cash with order, please.

HILLCREST GREENHOUSES, Franklin, Pa.

EUONYMUS RADICANS VEGETUS.

Immediate Shipment Per 100 Per 1000

Strong rooted cuttings..... \$8.00 \$75.00

PLANE-VIEW NURSERY

Newport, R. I.

HARDWOOD CUTTINGS

HARDWOOD CUTTINGS.
From Hardy Northern-grown Shrubs and Trees. Delivery after December 1. From our own plantings and blocks checked yearly for accuracy. Cut 7 inches.

Per 1000

Aronia melanocarpa..... \$ 4.00

Cydonia japonica..... 6.00

Cornus paniculata..... 4.00

sibirica..... 4.00

alba (yellow bark)..... 6.00

amomum..... 4.00

Forsthia intermedia..... 3.00

spectabilis..... 3.00

Elder, Golden..... 6.00

Cutleaf..... 4.00

Red-barked..... 5.00

canadensis..... 5.00

Hydrangea P.G..... 5.00

Hydrangea A.G..... 5.00

Privet, Amur..... 3.00

Regel (true)..... 3.00

Ibota..... 3.00

Honeysuckle, morrowi..... 3.00

bella albidia..... 3.00

tat. rosea..... 4.00

korolkowi..... 4.00

zabell..... 3.00

syringantha..... 5.00

maacki..... 4.00

Diervilla trifida..... 4.00

Philadelphus grandiflorus..... 3.00

Mt. Blanc..... 3.00

Bouquet Blanc..... 3.00

coronarius..... 3.00

lemonii..... 5.00

Physocarpus opul. aureus..... 3.00

Physocarpus opul. nanus..... 3.00

Sorbaria sorbifolia..... 3.00

Spiraea billardi..... 3.00

froebell..... 3.00

thunbergi..... 3.00

vanhouttei..... 3.00

trichocarpa..... 3.00

Snowberry, White..... 3.00

Lilac, rothomagensis..... 5.00

Viburnum dentatum..... 4.00

Poplar, Lombardy..... 3.00

Willow, Niobe..... 3.00

Wisconsin..... 3.00

Golden..... 3.00

Pussy..... 3.00

Rosa rugosa Belle Poitevine..... 7.00

Rosa rugosa Hansa..... 7.00

Thuja pyramidalis..... 25.00

globosa..... 25.00

wareana..... 25.00

Packed free. Cash with order, please. Delivery in good order guaranteed.

THE SCOTCH GROVE NURSERY

Scotch Grove, Iowa

PFITZER JUNIPER CUTTINGS.

6 to 10 ins. long, not trimmed. Well packed.

\$10.00 per 1000. Cash with order.

KRONE'S FLOWER SHOP

1221 Grand Ave. Fort Smith, Ark.

HARDY PLANTS

DAISY DIVISIONS.

Strong, field-grown stock; Majestic, 18c;

Mt. Shasta, 12c; Supreme, 8c; White Swan, 8c.

DELPHINIUM BELLADONNA IMP.

1-yr. field seedlings, \$25.00 per 1000.

IVIES IN 3-INCH POTS.

English, 15c; Baltic, 15c; Hahn's, 15c.

Euonymus palustris, 2-inch pots, 10c.

Euonymus palustris, 2-inch pots, 10c.

STRAFORD GARDENS, Delaware, O.

FEONIES.

Felix Crousse, cherry-red; Mons. Jules Elie

pink; Mons. Martin Cahuzac, darkest red;

Baroness Schroeder, white; Karl Rosenfeld

crimson. Strong 3 to 5-eye divisions, \$5.00 per

10, \$40.00 per 100, or \$350.00 per 1000. Terms:

Cash with your order, please.

PAYNE DAHLIA FARMS

Route 5, Kansas City 3, Kan.

SUNNY BORDER'S
QUALITY PERENNIALS.

The following are always in strong demand and not too easily mass-produced.

	Per 10	Per 100
Anemone hupehensis, early pink.....	\$2.50	\$20.00
Anemone September Queen, double red.....	2.50	20.00
Anemone japonica alba, tall, single white.....	2.50	20.00
Anemone japonica Kriemhilde, tall, semidouble pink.....	2.50	20.00
Anemone japonica Whirlwind, tall, semiwhite.....	2.50	20.00
Buddleia White Cloud, hardy white.....	3.00	25.00
Coreopsis Baden Gold, tall, wiry stems, golden-yellow flowers, 3 to 4 ins. across.....	2.50	20.00
Dianthus June Carmine, new, 2 1/2-in. pots.....	5.00	40.00
Geum Fire Opal, hardy red.....	2.50	20.00
Geum Princess Juliana, hardy orange.....	2.50	20.00
Hibiscus, giant Sunny Border hybrids, sensational large flowers and lovely colors.....	2.50	20.00
Iberis Purity, new improved Snowflake, blooms 100 per cent.....	2.50	20.00
Monarda Croftway Pink, clear pink.....	2.50	20.00
Monarda Sunset, brilliant deep wine-red.....	2.50	20.00
Penstemon Rose Elf, clear rose-colored, compact and neat.....	2.50	20.00
Violet Royal Robe.....	2.50	20.00

Send for our complete trade list.
SUNNY BORDER, Inc. Kensington, Conn.

MAMMOTH FLOWER PANSY PLANTS.

Long, white, thick roots; half-grown; large flowers and many blooms at maturity, \$5.50 per 1000.
Swiss Giants, Mixed.
Dark green plants, long white roots, unexcelled color range, \$5.50 per 1000.
Donovan's Special.
One-half to two-thirds grown, a preferred plant at maturity, wide and unexcelled rainbow color range, \$5.50 per 1000.
Our Own Mammoth Flower and Plant Special.
Broad, dark green leaves and stems; long, white thick roots, color range and size of flower will satisfy at maturity, \$5.50 per 1000.
All plants state inspected.
Transplants of the above varieties about to bud, \$10.00 per 1000.

PALACE GARDENS, since 1904
General Delivery Kalamazoo, Mich.

HARDY PERENNIALS.

Immediate Shipment
Strong rooted cuttings, Per 100 Per 1000
Aster Frikarti (Wonder of Staefa).....\$8.00 \$75.00
Lithrum (Morden's Pink).....6.00 50.00
Hardy Clump Verbena (Canadensis).....6.00 50.00
PLANE-VIEW NURSERY
Newport, R. I.

COLORFUL MUMS.

Strong field-grown clumps of 150 colorful hardies from our test gardens. Available this fall for winter propagation. Write today for descriptive price list.

PRAIRIE SOUTHWEST FLORETUM
R. F. D. 1, Box 103 Fall River, Kans.

PERENNIALS

New and Standard Kinds.
A most modern and complete selection.
New Wholesale List now ready.
Send for your Free Copy Now.
CARROLL GARDENS
Box 15 Westminster, Md.

PHLOX.

See our large classified ads in the October 15 issue, or write for complete list of phlox and other perennials. Strong, 1-yr., all been in bloom.

HENRY LE POIRE

Route 2 Zeeland, Mich.
HARDY MUMS—Field Clumps.
1 each of 20 varieties, \$5.00
1 each of 50 varieties, \$10.00
Or will exchange for Peonies, Glads, Dahlias, Hardy Phlox, or what have you?
BROADLANDS NURSERY & ORCHARDS
R. R. 7, Box 448 Terre Haute, Ind.

USE WELER'S HARDY PHLOXES

For propagation.
Now is the time to make them.
See our catalog or ask for it.
70 varieties to select from.
WELER NURSERIES CO., Inc.
Holland, Mich.

BLEEDING HEARTS.

Per 100
Dicentra spectabilis, 3 to 5-eye.....\$25.00
Dicentra spectabilis, 5 to 8-eye and up 35.00
Dicentra eximia, 3 to 5-eye.....15.00
Dicentra eximia, 5 to 8-eye and up.....20.00
J. HENDRIKS Grower Portage, Mich.

America's Best Source for Hardy Plants is

THE WAYSIDE GARDENS

Mentor, Ohio
Write for Trade List.

Pansies, perennials and rock plants in wide variety. Send for catalog.

PITZONKA'S PANSY FARM

Bristol, Pa.

ROSEBUSHES

MULTIFLORA JAPONICA.
DE-EYED ROOTED CUTTINGS FOR BUDDING.
6 to 11 mm., \$35.00 per 1000
(Write for special prices on larger quantities)

Also a Large Supply of
HEAVY-ROOTED MULTIFLORA CUTTINGS FOR FENCE ROW PLANTING.
4 to 6 mm., \$30.00 per 1000
(Write for special prices on larger quantities)
December 1 delivery—Cash with order (Freight or Express Delivery)

PETERSON & DERING
Rose Growers Scappoose, Ore.

OWN-ROOT ROSES.

We have a limited quantity of Crimson Rambler Roses in surplus at this time and offer them as follows:

	100 to 499	500 up
	Per 100	Per 1000
No. 1.....	\$20.00	\$180.00
No. 1 1/2.....	15.00	130.00
No. 2.....	12.00	100.00
No. 1 and No. 1 1/2 tied 10 per bundle, No. 2 tied 25 per bundle.....		

Terms: As Usual
LAKE'S SHENANDOAH NURSERIES
Shenandoah, Iowa

ROSES.

We have the following excellent No. 1, 2-year-old, field-grown rosebushes, above our regular requirement. We offer them for delivery this fall only at \$35.00 per 100.

1500 Eldorado, yellow
1500 Konigin, satiny pink
1500 Killarney, Dbl. White, pure white
1500 Mrs. W. C. Miller, salmon-rose
1500 McGredy's Scarlet, crimson-scarlet.
Ask for prices on the entire amount.

BROOKVILLE NURSERIES

Glen Head, N. Y.

2-YR.-OLD OWN-ROOT PAUL'S SCARLET.

Per 100 Per 1000
XX, heavy, 5 to 6 canes.....55c ea. 50c ea.
No. 1, 3 to 4 canes.....45c ea. 40c ea.
No. 1 1/2, 2 to 3 canes.....35c ea. 30c ea.
Ready for delivery anywhere—Cash with order. (Freight or express delivery)

PETERSON & DERING
Rose Growers Scappoose, Ore.

ROSEBUSHES.

Large selection of Hybrid Tea Roses, budded on Multiflora Japonica stock.
For fall or spring delivery.
Send for list.

CHARGLYN NURSERIES

P. O. Box 575 Painesville, O.

ROSEBUSHES—2-yr. plants, grown right, graded right, packed right. Very complete assortment varieties. Ask for price list and book your requirements now.
ROSEMONT NURSERIES
D. L. Thompson, Mgr.
Box 839 Tyler, Tex.

NORTHERN OHIO FIELD-GROWN ROSES.

Write for list.

LESTER F. SQUARE NURSERIES

Wholesale Growers
Painesville, Ohio.

ROSES.

See our display ad in this issue.
OZARKS PLANT FARMS, Inc.
Seminole Dr. Springfield, Mo.

SEEDS

CHINESE CHESTNUTS.

(Hemami Strain.)
Available for immediate delivery at 50c per pound, for seed, express prepaid from Trappe, Md. Write CHARLES ARENSBERG, 1404 First National Bank Building, Pittsburgh, Pa.

TREE SEEDS.

Collectors and extractors of evergreen seeds. Finest-quality coniferous forest tree seeds and open cones from the Great Lakes region.
LESLIE R. RHOADES & SON
Lock Box 96 Merrillan, Wis.

SHRUBS AND TREES

RED JAPANESE MAPLE SEEDLINGS.

Carefully selected for good red color.

Acer palmatum atropurpureum Per 100

10 to 13 ins., XX.....\$40.00

8 to 10 ins., XX.....30.00

6 to 8 ins., XX.....25.00

204 Delaware Ave. Palmyra, N. J.

TAXODIUM DISTICHUM—We can furnish this scarce and beautiful tree in sizes 3 to 4 ft. and up to 7 ft., B&B. Our plants are bushy and straight.

ACER SACCHARUM—We have many thousands of these in all sizes from 3 to 12 ft. The finest lot we ever saw.

THE WING NURSERIES

Mechanicburg, Ohio

2-YEAR LINING-OUT STOCK.

Per 100

6000 Magnolia glauca, 10 to 12 ins.....\$10.00

1800 Aronia arbutifolia, 10 to 12 ins.....10.00

WILLIAM J. WRIGHT

R. D. 1 Bridgeton, N. J.

NURSERY GROWN STOCK.

Per 100 Per 1000

Cornus florida.

White Flowering Dogwood.

2 to 3 ft., br.....\$25.00 \$200.00

3 to 4 ft., br.....30.00 250.00

Hydrangea paniculata grandiflora.

Peegee Hydrangea.

4 to 12 ins., c.....8.50 75.00

12 to 18 ins., c.....9.50 85.00

18 to 24 ins., c.....11.00 100.00

Ligustrum ovalifolium.

California Privet.

8 to 24 ins., 1-yr., c.....20.00

Ligustrum sinense.

Amur River South Privet.

8 to 24 ins., 1-yr., s.....8.00

Juniperus virginiana.

Red Cedar.

6 to 9 ins., tr., x.....40.00

9 to 12 ins., tr., x.....50.00

12 to 18 ins., tr., x.....60.00

All stock below is first-quality collected stock.

Per 100 Per 1000

Tsuga canadensis.

Canadian Hemlock.

4 to 8 ins., s.....\$2.00 \$15.00

8 to 12 ins., s.....3.00 25.00

12 to 18 ins., s.....4.50 40.00

Ilex opaca.

American Holly.

4 to 8 ins., s.....2.50 20.00

8 to 12 ins., s.....3.50 30.00

12 to 18 ins., s.....5.00 50.00

Kalmia latifolia.

Mountain Laurel.

4 to 8 ins., s.....2.00 20.00

8 to 12 ins., s.....4.00 35.00

12 to 18 ins., s.....5.00 50.00

Each

12 to 18 ins., 3 br. and up.....\$0.25

18 to 24 ins., 3 br. and up......25

Rhododendron maximum.

Rosebay Rhododendron.

Per 100 Per 1000

4 to 8 ins., s.....\$2.50 \$20.00

8 to 12 ins., s.....4.00 35.00

12 to 18 ins., s.....6.00 55.00

Each

12 to 18 ins., 3 br. and up......25

18 to 24 ins., 3 br. and up......25

12 to 18 ins., 4 canes and up, B&B.....1.00

18 to 24 ins., 4 canes and up, B&B.....1.25

Azalea calendulacea, Flame, and

Azalea nudiflora, Pinkster Flower.

6 to 24 ins., liners......04

12 to 18 ins., 3 canes and up......20

18 to 24 ins., 3 canes and up......25

12 to 18 ins., 4 canes and up, B&B.....1.00

18 to 24 ins., 4 canes and up, B&B.....1.25

CUMBERLAND PLATEAU NURSERY

York Route Crossville, Tenn.

HEDGE PLANTS.

Privet, Amur River North

2 to 3 ft., 2 and 3 canes.....\$ 50.00

3 to 4 ft., 4 canes and up.....60.00

Privet, California

12 to 18 ins., well branched.....25.00

18 to 24 ins., well branched.....40.00

2 to 3 ft., well branched.....50.00

3 to 4 ft., well branched.....60.00

Privet, Holia

2 to 3 ft., well branched.....55.00

3 to 4 ft., well branched.....65.00

Privet, Regel Border

24 to 30 ins., well branched.....160.00

30 to 36 ins., well branched.....185.00

3 to 4 ft., well branched.....200.00

Lagerstroemia indica

Improved watermelon-red and pink

Crape Myrtle

15 to 18 ins.....\$12.00

18 to 24 ins.....20.00

24 to 30 ins.....20.00

30 to 36 ins.....25.00

3 to 4 ft.....35.00

4 to 5 ft.....50.00

5 to 6 ft.....50.00

Spiraea vanhouttei

Per 100 Per 1000

2 to 3 ft., well branched.....\$15.00 \$140.00

3 to 4 ft., well branched.....20.00 185.00

TWITTY NURSERY

P. O. Box 777 Texarkana, Tex.

LINING-OUT STOCK.

Per 100

Euonymus vegetus, 1-yr. pots, spg.....\$18.00

Malus atrosanguinea, 1-yr., gfta.....25.00

Malus purp. Lemoine, 1-yr., gfta.....25.00

Malus schiedeckeri, 1-yr., gfta.....25.00

Pyracantha lalandi, 5-in. pot.....65.00

Sorbus aucuparia, 1-yr., 1 1/2 to 2 ft.....12.00

Viburnum carlesii, 1-yr., pot gft.....40.00

Taxus cuspidata, 2-yr., pot.....22.50

Taxus cuspidata, 1-yr., pot.....25.00

Taxus cuspidata, 1-yr., pot.....25.00

Taxus med. hickel, 1-yr., pot.....22.50

Thuja occ. pyramidalis, 1-yr., pot.....22.50

Taxus in following varieties are 1-yr., twice 1/2, 10 to 12 ins., at \$45.00 per 100:

Cuspidata, cusp. brown, cusp. nana, inter-

media, media hatfieldi and media hickel.

THE COTTAGE GARDENS

Lansing 15, Mich.

Ligustrum

lucidum, bushy, 3 to 4 ft.....Each Per 100

lucidum, bushy, 2 1/2 to 3 ft.....\$2.00

lucidum, bushy, 1 1/2 to 2 ft.....1.50

Nandina

Magnolia

Per 100

grandiflora, S. tr., 4 to 6 ins.....\$ 8.00

grandiflora, S. tr., 6 to 8 ins.....10.00

grandiflora, S. tr., 10 to 12 ins.....15.00

PINE RIDGE NURSERY

Route 2 Marshville, N. C.

SHRUBS and TREES—Continued

LINING-OUT STOCK.

	Per 100
Pfitzer Junipers, 2 1/2-in. pots.....	\$20.00
Abelia grandiflora, 1-yr., field-grown.	
12 to 18 ins., \$2.50 per 10.....	22.50
18 to 24 ins., 3.50 per 10.....	30.00
Redbud, Cercis canadensis.....	
12 to 18 ins.....	3.00
18 to 24 ins.....	4.00
2 to 3 ft.....	6.00
Cotoneasters, 1-yr., field-grown.....	
Dielsiana, 8 to 12 ins.....	20.00
Dielsiana, 12 to 18 ins.....	25.00
Divaricata, 9 to 12 ins.....	18.00
Zabell, 9 to 12 ins.....	18.00
Azaleas, 2 1/2-in. pots, clipped once	
Flame.....	15.00
Snow.....	15.00
Hinomay.....	15.00
Azalea Vuykiana, rooted cuttings.....	Per 10
Beethoven, large, mauve.....	\$1.00
Strauss, salmon-rose.....	1.00
Sibellus, orange-red.....	1.00
Palestrina, Ivory-white.....	1.00
Schubert, light pink.....	1.00
Buddleias.....	Per 10
Dubonnet, No. 1.....	\$3.00
Med.....	2.50
Charming, No. 1.....	2.70
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Med.....	2.30
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Cash with order, or 25 per cent. balance	
C.O.D. Packed free for cash with order.	
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MIMOSA (SILK TREE)
ALBIZZIA JULIBRISSIN

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7000 6 to 12 ins.....	\$ 5.00	\$ 40.00
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300 at the 1000 rate.		

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CHRISTMAS WREATHS.
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ROYER FOUNDRY & MACHINE CO.
182 PRINGLE ST., KINGSTON, PA.

OAK WILT DISEASE.

[Continued from page 17.]

and appearance of symptoms varied considerably.

Spread of Disease.

From a single infected tree in an oak stand, the disease appears to spread in a more or less circular pattern to adjacent trees, a few to a considerable number dying each year. Field observations indicate that healthy oaks immediately adjacent to diseased trees are almost certain to become infected; at the same time, the disease may appear in an oak a few hundred feet to several miles distant from any wilt-infected tree. It seems probable that a single wilting tree may serve as a source of infection to oaks both in the immediate vicinity and in distant areas. Susceptibility apparently has no relation to site conditions; infected trees have been found on dry hilltops, on slopes and along watercourses. Nor is the disease restricted to certain age groups, since wilting oaks in all age classes, from young seedlings to mature trees, have been found.

The disease appears to be spreading more rapidly in Iowa and Illinois than in regions farther north. In Wisconsin a forest tract of fifty acres,

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By L. H. Bailey

For half a century a standard manual on the propagation of plants by means of seeds, layers, cuttings, buds, grafts and otherwise. Reprinted in many editions, this book was out of print for a time, but is again available. Half of the 456 pages contain chapters on nursery practices, particularly regarding propagation, while the latter half comprise an extended alphabetical list of plants with full indications for propagation under each plant.

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SEEDS

Collectors of Tree, Shrub and
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E. C. MORAN Stanford, Mont.

for example, might contain only one small area of wilting trees, while in Iowa tracts of similar size often contain several areas of dead and dying oaks, and generally these areas are quite large. In one Illinois woodland of approximately thirty acres, infection developed in three separate areas during the summer of 1949, and, although this tract was closely inspected the previous year, no wilting oaks were discovered. In another Illinois forest area of about 160 acres, wilting trees were found last summer in five distinctly separate locations.

Damage from Wilt.

The oak wilt disease already has caused an appalling amount of damage. At Madison, Wis., there are wilting and dying oaks in many of the residential areas. Dead and dying oaks dot the forests of the university arboretum; clearings were noted here and there from which oaks killed by the wilt had been removed. Many more have died in the forests adjacent to the study plots; two dying oaks were seen in the picnic grounds of the north beach.

In Pilot Knob state park, a forested tract of 380 acres near Forest City, Ia., the damage that oak wilt can cause is illustrated impressively. From the tower on Pilot Knob, well above treetop level, oak trees in all stages of the wilt disease can be seen in every direction. When viewed during the summer, the brown and gold and tan of wilting foliage, together with the whitened trunks of trees, dead for a year or more, stand out in striking contrast against the dark green background of the surrounding forest. It is estimated that there are 8,000 to 10,000 wilt-killed trees standing in the park, and that at least twenty per cent of the oaks still living are infected. According to Harold Cole, park custodian, and Paul Hoffman, of the pathology department, Iowa State College, approximately 1,000 dead oak trees have been removed each year for the past seven years.

Street and lawn trees in sections of Fort Dodge, Ia., have suffered severely from oak wilt. Wilting oaks were seen in many other sections of the state; the disease appears to be well established at Mason City, Doliver Memorial state park, Cedar Rapids, Marengo, Iowa City and Wilton Junction, just west of Davenport.

From Moline, Ill., north and east along the Rock river to Oregon, Ill., dying oaks were noted in many of the forests and wood lots adjacent to the highway. Similar conditions pre-

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HELP WANTED

Nursery propagator wanted. Man must be thoroughly familiar with raising evergreens, shrubs and trees. Knowledge to include experience in grafting, budding, making cuttings and raising plants from seed. Write us for an interview. **DEKALB NURSERIES, Inc.** NORRISTOWN, PA.

HELP WANTED

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WILL PAY \$75,000 CASH

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WANTED — Distributors for fast-moving redwood items for the florists' and nursery trade. Send references with first letter. **BETTER WOODCRAFT**, 2120 E. Gidley St., Rosemead, Calif.

vail along state route 64 to within a few miles of Chicago. Wilt-infected trees have been found in the vicinity of Wheaton, Lemont, Tinley Park and other sections of Cook county.

The gravity of the situation hardly can be overemphasized. The oak wilt disease is spreading, apparently with increasing rapidity, and the entire hardwood belt, wherever oaks are found, may become its range. It is a menace to every oak tree in the land. It is as deadly as elm phloem necrosis, and in its over-all effects it is alarmingly reminiscent of the chestnut blight.

Possibilities of Control.

No infected tree in the red oak group has been known to recover. It has been suggested that drastic pruning might control the disease in trees of the white oak group when symptoms appear in only one or two iso-

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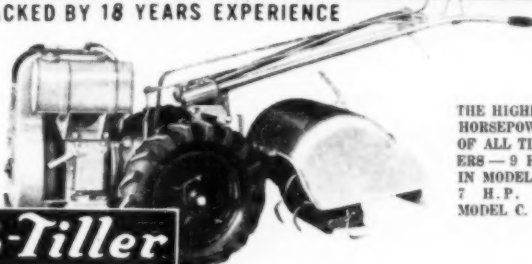
Branch Houses at: Madison, Wis.; Bloomington and Peoria, Ill.; Kokomo and South Bend, Ind.

lated branches, but results so far are not encouraging.

No curative or preventive treatments attempted thus far have been effective. Beyond the fact that the causal agent is the fungus, *Chalara quercina*, little is known about the disease. It is not known how the disease is carried from an infected to a healthy tree. Complete sanitation, careful removal of diseased trees as soon as infection becomes apparent, is the only procedure suggested at present as a possible means of checking further spread of the disease. It is not known definitely whether or not this method will be effective.

There is urgent need for the establishment of a research program with sufficient funds and personnel to conduct further study of the disease and to develop, if possible, better control methods than now exist. Because the oak wilt disease is of national importance, the logical agency to conduct a program of this nature is the federal government; specifically, the division of forest pathology and division of forest insect investigations of the United States Department of Agriculture bureau of plant industry, soils and agricultural engineering, at Beltsville, Md. These divisions functioned successfully in studies of the Dutch elm disease and elm phloem necrosis; to date, however, no funds have been allocated for the purpose of studying the oak wilt disease. If the importance of this disease can be brought sufficiently to the attention of legislators, government departmental heads and other responsible federal authorities, it is reasonable to assume that adequate funds will be allotted for such studies. The need for the research program is great; the time it should be started is now. If there is undue delay in initiating such a program and carrying it through to a successful conclusion, the oaks may follow the chestnuts into the oblivion of lost resources.

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Peach Pit Tests

EFFECT OF DRY STORAGE ON PEACH PIT VIABILITY.

Peach pits of a California drying variety, Lovell, in recent years have been used as a seed source for peach seedling rootstocks. In this paper the term "pit" refers to the stony pericarp and enclosed seed, while the term "seed" is applied when the seed is separated from the stony pericarp. Large quantities of Lovell pits are available, and the seedlings grown from them are sufficiently different from most of the peach varieties now propagated to be readily distinguishable from the budded trees. This paper is a preliminary report of tests to determine the effect of dry storage for one and two years on the retention of viability of the seed and on the growth of the seedlings from such seeds and was published as journal paper No. 741 of the New York state agricultural experiment station.

Materials and Methods.

Lovell peach pits of the 1944 harvest, which had been stored in an open shed for one year, and of the current harvest year were obtained in the fall of 1945 from Kelly Bros. Nurseries, Inc., Dansville, N. Y. After soaking in water for twenty-four hours, 4,000 pits of each lot were planted in shallow trenches in the nursery. Each trench was covered with a layer of moist peat moss and with five to six inches of soil ridged over the moss. The ridge was smoothed down in early spring so that only a few inches of soil were left as a cover for the seeds. The remaining pits of the original shipment were stored in closed steel drums in a well ventilated shed to be used in subsequent years.

About December 15, 1945, lots of 2,300 and 2,400 pits of the 1944 and 1945 harvest, respectively, were taken from the steel drums, soaked for twenty-four hours in water and stratified for afterripening in moist, clean pine sawdust at a temperature of 35 to 40 degrees Fahrenheit. At the end of a 120-day period, each lot was inspected. Sprouted seeds were sorted out and immediately planted to the nursery row, with the same treatment as in the previous year. Pits which had not cracked naturally

after 140 days were cracked mechanically. Poor seeds were discarded, and sound ones were planted.

Additional pits of the 1946 harvest were obtained in early October, 1946. Lots of 1,000 each of the 1944, 1945 and 1946 harvest years were planted in the same way, and the remaining newly harvested pits were stored in the manner previously described. Also, beginning about December 15, identical lots, as used for fall planting, were afterripened and after a 120-day period were examined, and sprouting seeds were at once planted.

For comparison with the Lovell, one-year-old Carolina Natural pits were included in the 1946-1947 test. To determine the approximate germination, tests by the excised embryo method were made prior to fall planting in 1945, 1946 and 1947 by C. E. Heit, seed investigations division, New York state agricultural experiment station, Geneva.

Results.

Differences existed in the quality of pits from each harvest year, and judging by the appearance and per-

centage of split pits present, lots harvested in 1944 and 1946 were superior to those of 1945. In a sampling of 7,500 seeds from the 1944 harvest, 2.4 per cent were found to have split pits; 5.7 per cent of a sample of 6,895 of the pits from the 1945 harvest were graded out as worthless. Lots obtained in 1946 and 1947 were of excellent quality.

Weight loss occurred during dry storage. Such loss was greatest during the first year of storage. In twenty different samplings a difference of six ounces per 500 pits was found. The same number of newly harvested but dry pits weighed five pounds and six ounces, whereas those

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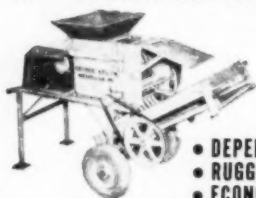
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FREE PLANT USER REPORTS

Prepared by Karl D. Brase, New York state agricultural experiment station, Geneva, this paper was presented before a recent meeting of the American Society for Horticultural Science at Chicago and was published in the proceedings of the society.

that had been stored for one year weighed only five pounds. There was only a slight weight loss under the storage method employed during the second storage year.

Excised Embryo Method.

Germination tests by the excised embryo method, made before fall planting, indicated a rather rapid decline in the germination of Lovell pits when stored dry over a 2-year period. After three years of dry storage none of the excised seeds showed growth responses.

In all viable seeds of newly harvested pits the epicotyl developed into a shoot and the hypocotyl into a root. Similar growth responses, although in fewer instances, occurred with viable seeds after one year of storage. After the second year in storage growth responses of viable seeds were weak, and in no case did shoot growth occur.

Fall-planted Pits.

During the two test years, fall-planted, newly harvested Lovell pits that had not been previously after-ripened in moist sawdust gave the best stands in the nursery row.

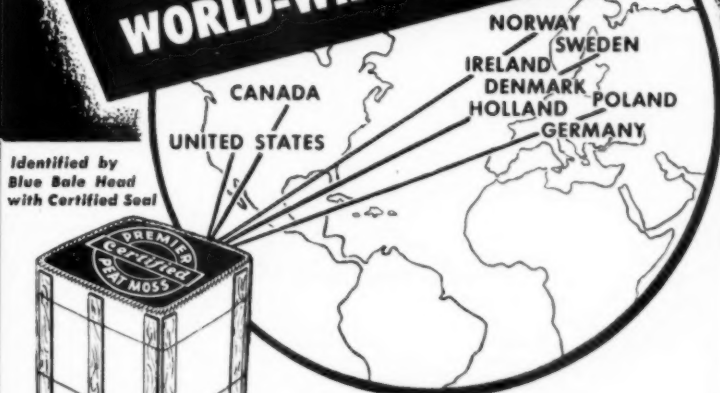
The stand from one-year-old pits stored dry was twelve per cent lower in 1946 than that from newly harvested ones. The second test year showed a further decline with a stand of 16.2 per cent less than in 1946. At the same time, the stand from pits of the 1945 harvest, after one year of dry storage, was 8.3 per cent lower than the previous year, and 1,000 pits of the current harvest (1947) produced 718 seedlings. One-year-old Carolina Natural pits giving an approximate germination test of forty-two per cent by the excised embryo method produced, when fall-planted, 437 seedlings, or a stand about as good as the germination test indicated. Usually the germination test indicates a germination better than actually obtained in the field.

Spring-planted Seeds.

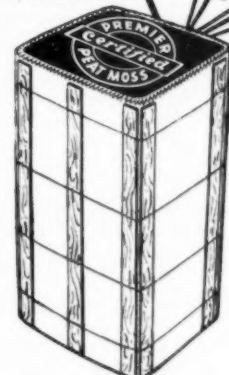
Fall-planted pits naturally after-ripened in the nursery row gave better seedling stands than did artificial afterripening and planting the sprouting seeds in the spring. Thus, in 1946, stands in the nursery row were ten per cent lower with one-year-old seeds and 7.7 per cent lower with new seeds than stands from fall planting. In 1947, seedling stands of the Lovell were, with 2-year-old seeds, 15.1 per cent lower; with one-year-old seeds, 27.1 per cent lower, and with new seeds, 22.8 per cent lower than those of fall-planted pits. After-ripened Carolina Natural one-year-old

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seedlings gave a 12.6 per cent lower stand than when fall-planted.

Growth of Seedlings.

In both test years, newly harvested seeds showed earlier seedling emergence than seeds stored one and two years, respectively. Furthermore, during the early part of the growing season, seedlings from the new seeds showed greater vigor than those from one and 2-year-old seeds. Such differences in vigor were also noticed in the excised embryo germination tests. Beginning with the middle of July, the growth differences gradually disappeared, and at budding time in early September all seedlings appeared uniform in height. Evidently the greater number of seedlings per foot of row from newly harvested Lovell seeds was responsible for the fact that these seedlings did not maintain their earlier advantage.

Summary.

The tests indicate that the viability of Lovell pits decreases with age during dry storage and that pits stored for more than one year have a reduced planting value. It is also shown that fall planting gave better seedling stands during two successive test years. So far as labor is involved, fall planting of pits is easier than planting afterripened sprouting seeds in the spring. Furthermore, danger from contamination is less in fall planting, since in the planted row the individual pits are not in contact with each other as during stratification for afterripening. Once the seed has been afterripened it appears to be extremely susceptible to disease. Contamination is more likely to occur if seeds must be disturbed and transferred from the afterripening medium to the soil. Field planting of apparently healthy sprouting seeds gave at best only a seventy-five per cent survival.

The Lovell variety has a relatively long afterripening requirement. A large number of afterripening pits do not crack after 120 days of stratification. The number of cracking pits and sprouting seeds is again directly related to the age of the pits used. Thus, 1,000 pits of the 1946 harvest, when afterripened for 120 days, gave in the spring of 1947 664 sprouting seeds, whereas the same number of one and 2-year-old pits treated in an identical way gave only 170 and 92 sprouting seeds, respectively, at the same date. Similar observations have been reported with Elberta pits.

Seeds which, after 140 days of afterripening, have to be excised from the stony pericarp appear to be, even if sound, of doubtful planting value.

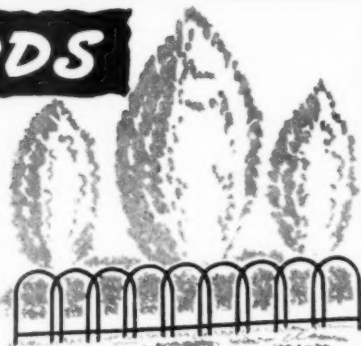
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Weather and soil conditions no doubt influence the stand of seedlings from such excised sound seeds. The test year 1946 furnished ideal weather and soil conditions in the spring, but only a twenty-five and twenty-four per cent seedling stand was obtained from excised, sound and afterripened seeds. In the spring of 1947, weather and soil conditions were adverse, and seedling stands were affected correspondingly. Thus, seedling stands from excised seeds were from five per cent to zero.

Although tested for only one year,

it appears that the loss in viability during dry storage is less with Carolina Natural pits than with pits of the Lovell variety.

CLARENCE ALDRICH, Aldrich's Nursery, Farmington, Mich., has left to spend the winter at Miami, Fla.

HAVING operated a landscape business before the war, A. H. Christiansen, 9105 James avenue, south, Minneapolis 20, Minn., is starting a 12-acre nursery.

PLANT NOTES.

[Continued from page 23.]

stand frost, while that from its northernmost stations in Japan would no doubt be hardy in all except the coldest parts of this country.

Erigeron Compositus.

A reader states a problem as follows: "I am looking for a tiny rock garden plant, not too difficult to grow, that has a long blooming season. Can you help?"

There are, no doubt, a number of plants that would answer this purpose, and I can think of at least five without exercising much gray matter, but I do not recall one better than *Erigeron compositus* to answer all these requirements. In fact, if I were restricted to one small fleabane, I am sure this one would be my choice.

That is not only because of its long blooming season, which usually lasts from May until the frosts of autumn remind it that it is time to cease its labors, but also for its lovely, much-divided, gray foliage. That foliage in inch-high tufts would alone be worth growing the plant. I have had the species several times from several sources, usually with white or rather dirty lavender flowers, the former color an enchanting flower and the latter not so enchanting. But I had once, and think it would yield itself again to a little searching, a form with inch-wide flowers of clear pale lavender. Best of all the admirable traits of this alpine fleabane is its ease of culture in eastern gardens. Some losses were experienced here every time we grew the plants if we ran into a month or so of dry weather, but they came through ordinary weather without harm, and the ones in frames, which were watered more or less regularly, were no trouble at all. Like most gray-leaved plants, the fleabane is safest in a gritty, well drained soil, and, like many alpine, it likes a little shade in this climate during the middle hours of the day. When in bloom, it is not much more than two inches tall, making it fit for the choicest company in the rock garden. It is easily grown from spring-sown seeds, from division of old stools and from cuttings.

The White Snakeroot.

As this note was written in late October, a clump of white snakeroot, *Eupatorium urticaefolium*, or *E. ageratoides*, blooming in its lightly shaded corner, cried out to be mentioned as a likely candidate for the gardener who carries his activities right up to the last possible moment of the growing season. It has been in bloom since August, producing flat

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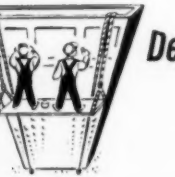
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heads of grayish-white flowers, not exciting, to be sure, but it is a pleasant sight to cheer one late in the season. *E. urticaefolium* will grow to four feet in height in rich soil in shade. What more could one ask of a garden plant of easy culture?

CHEMICAL WEED CONTROL FOR CONIFER BEDS.

A chemical preparation distributed under the name of Stanisol has been found to reduce effectively the weeding problem of the nurseryman in pine seedling beds, according to a report entitled "Chemical Weed Control for Conifer Seedlings and Transplants," by P. W. Robbins, B. H. Grigsby and B. R. Churchill, which appeared in a recent issue of the quarterly bulletin of the Michigan agricultural experiment station, East Lansing.

While the use of chemicals for weed control is not new, experimental results up to the present time have not proved practical enough, in field application, to be widely accepted by nurseries. For tests conducted in the spring of 1946 a series of weed control plots in one-year-old seedbeds of Norway and white spruces, jack pines, Douglas firs and Balsam firs and in transplant rows of northern white cedars, white spruces and red pines were established. A two per cent solution of sulphuric acid, a five per cent solution of phosphoric acid, Dow selective weed killer, 2,4-D and Stanisol were used. Of these materials, the trials indicated that Stanisol, a petroleum product of the naphtha series, containing approximately ten per cent of aromatic compounds, distributed by the Standard Oil Co. of Indiana, was the only chemical that would control the weeds and not harm the conifer trees.

Stanisol was tested more intensively during the summer on conifer seedlings which had made one month to six weeks' growth. The areas sprayed during 1946 included 2,000 square feet of white pines and 600 square feet of ponderosa pines and 400 square feet of Norway spruces. The spray was applied on warm bright days, using a back-pack sprayer and a fog nozzle. The naphtha was applied full strength and only at a rate heavy enough to wet the weed leaf surfaces. One-half hour after the application, the weed leaves curled up, and no trace of the Stanisol could be seen, since the material which had not penetrated the leaves had evaporated. Curly dock, lamb's-quarters, common chickweed, purslane, dandelion, crab grass and pigweed were killed. Common ragweed,

quack grass and June grass were damaged but not killed. Even though all weeds were not killed, the results in the seedbeds were considered most favorable, particularly since there was no damage of the seedlings. Weeding was reduced but not eliminated.

For a later test June 26, 1947, a warm day, 6,400 square feet of 10-day-old white pine seedlings were sprayed with Stanisol, using four gallons to 2,400 square feet. The same day 2,000 square feet of one-year-old white pines, which had been sprayed in 1946, were also sprayed at the same rate.

Three days after the treatment eighty-four per cent of the weeds in the 10-day-old seedling beds and fifty-six per cent of the weeds in the one-year-old beds were dead. The weeds in the one-year-old beds were killed wherever the density of the pine seedlings did not protect the leaf surface of the weeds. Three days after spraying, one of the white pine beds was weeded of all living weeds in one hour. An equal area of unsprayed white pine beds required five and one-half hours to remove all weeds. Both beds were weeded by the same man. Examination three days after spraying revealed no noticeable damage to the pine seedlings. Twenty-four days after germination, and fourteen days after spraying, the white pines showed damage of 15.4 per cent on one counting plot and 15.5 per cent on a second plot. The year-old pines showed no damage.

June 30, 6,000 square feet of white pines and an equal area of ponderosa pines were sprayed with Stanisol immediately after the mulch was removed and before the seed coats had been shed from the cotyledons. The ponderosa pines showed no damage, and only 1.2 per cent of the white pine seedlings were damaged.

July 7, twenty-four rows of 2-year-old red pine seedlings, which had been machine transplanted June 12, 13 and 14 and cultivated twice, were sprayed with Stanisol. The weeds, predominantly lamb's-quarters and crab grass, were small, and the spray killed them so effectively that no row weeding was necessary. Examination of the trees July 22 revealed no damage.

Thus it was found that Stanisol would effectively reduce the weeding problem and cause little damage if applied while the seed coats were still on the cotyledons, or if applied after the trees had reached one year of age. Stanisol is effective for the control of weeds in transplant rows if the spray is applied while the weeds are small. Enough of the material should be applied to wet the

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leaves of all weed plants. One gallon per 600 square feet is a suggested rate of application, but more may be required when weed growth is heavy.

Some differences in the tolerance of various species of conifers have been found, and small-scale trials on species other than ponderosa and white pines are suggested before treating large areas of young seedlings. Low spraying pressures, from fifty to seventy-five pounds, are adequate for weed control. Pressures in excess of 100 pounds may cause injury to the seedlings and should not be used.

ARBORVITAE WEEVIL.

Phyllobius intrusus is a new arborvitae weevil which has been discovered to be infesting arborvitae nursery stock in Rhode Island. Reports of the insect, which is indigenous to Japan, have also been made from Maine, Massachusetts, Vermont, Connecticut, New York and Pennsylvania, and it is being found in increasing numbers now that it is identified. Heretofore, it has been confused with other common weevils. Results of the extensive research on this insect have been published, recently, in the Rhode Island agricultural experiment station bulletin 305, entitled "The Arborvitae Weevil," by Theodore W. Kerr, Jr.

Damage is done to arborvitae by both larvae and adults, since the insect remains on the host plant throughout its life cycle. The adults emerge from the soil in early or mid-May and may be found in the field as late as July 20. They feed on the tender terminal growth in the top third of the tree, only lightly here and there, so that the damaged spots do not show a heavy concentration in one place. Damage consists of tiny, irregular cup-shaped depressions at the ends of the twigs, around which the plant tissue dies.

Eggs are laid from late May through the end of July, and the larvae hatch within thirteen to seventeen days, depending upon the temperature of the soil. Once hatched, they feed on the roots of the arborvitae. It is possible that they may so severely prune the roots of a plant that it will not survive digging and transportation to the customer.

Adults of this weevil are black beetles whose bodies and wings are covered by metallic green scales and fine short hairs. They are from five and one-half to six millimeters long. The larvae are white with light brown heads and, when in a recum-

bent position, usually assume a crescent form.

Control of the arborvitae weevil can be accomplished by applying DDT to the foliage of the host plant just as the adults appear, and before they lay their eggs (about eight days after emergence of the females from the soil). If spraying is done during this period of emergence, one-half pound of wettable fifty per cent DDT in 100 gallons of water should prove effective.

MAGNOLIAS FROM STEM CUTTINGS.

[Concluded from page 8.]

apart in the open ground. We found that the cold weather had killed practically every cutting which had not made that important first step toward new top growth. All the other cuttings, even those with a small amount of soft growth which had been made late in the fall, came through beautifully. The cuttings developed this year into strong, vigorous plants, none less than fifteen to eighteen inches in height with two, three and even four canes for each plant. They will be lined out in the open field this spring. We have successfully rooted *M. soulangeana* and *M. soulangeana nigra*, these being the easiest to root, *M. stellata* and *M. stellata rosea* can be rooted quite successfully, but not with the same high percentage of success as the *soulangeana* varieties. We have rooted *M. lennei* in small quantities, but we found *M. wilsoni* difficult to root in quantity. We are still experimenting with these more difficult species, for we feel it should be possible to root all magnolias if we once find out just how to do it.

One final point: We have demonstrated to our own satisfaction that this method of propagating magnolias is entirely successful and practical, and it is of interest to note that our cost accounting shows the unit cost of production from rooted cuttings to be exactly half that of propagation by grafting.

FORMERLY coowner of the Roseland Nursery, Houston, Tex., Thomas W. Thompson has opened greenhouses at 770 North Marshall street, Houston.

ON HIS seventieth birthday, John Kusse, who has worked for the Brown Bros. Co., Rochester, N. Y., nursery for fifty-eight years, was given a surprise party by his fellow workers. Mr. Kusse started with the company at 11 and is now vice-president in charge of nursery stock.

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ROT-RESISTANT LOCUSTS.

While the black locust has long been favored for its durability as fence post material, the more rot-resistant varieties have been given attention by scientists of the United States Department of Agriculture. Theodore Scheffer, of the bureau of plant industry, and Henry Hopp, formerly of the Soil Conservation Service and now with the office of foreign agricultural relations, carried out tests on locust wood on Long Island, N. Y., where several varieties grow. These included the much-mentioned shipmast variety, the recently recognized Flowerfield, which is also a sprout-reproduced (clonal) variety, and the unselected common locust.

The investigators tested small blocks of heartwood from forty-eight trees of various sizes and kinds. They observed that on the average the Flowerfield strain decayed "the least," shipmast "somewhat more" and the common locust "considerably more." Trees of the common locust varied greatly in durability, but the others (vegetatively propagated) were uniformly durable.

As in other tree species, the white sapwood, just inside the bark, was not durable. The outer part of the heartwood, in all strains, was most resistant to rot, and the nearer the pith, the less was its resistance. Also, the wood lowest in the tree showed the greatest rot resistance. In general, the resistance of locust heartwood to rot is greater as the tree is larger. This is especially true of the outer heartwood. The yellow-colored wood proved a little more rot-resistant than the brown.

The old notion that locust posts cut in winter last longer in a fence than those cut at other seasons has not much to back it up, say the scientists. Posts of common locust cut in winter were slightly more resistant, but, in the case of the shipmast, summer-cut posts had a little advantage; however, in neither case was the difference of practical significance.

What keeps locust heartwood from rotting? According to the scientists the tree builds up chemicals that poison the rot-producing fungi.

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